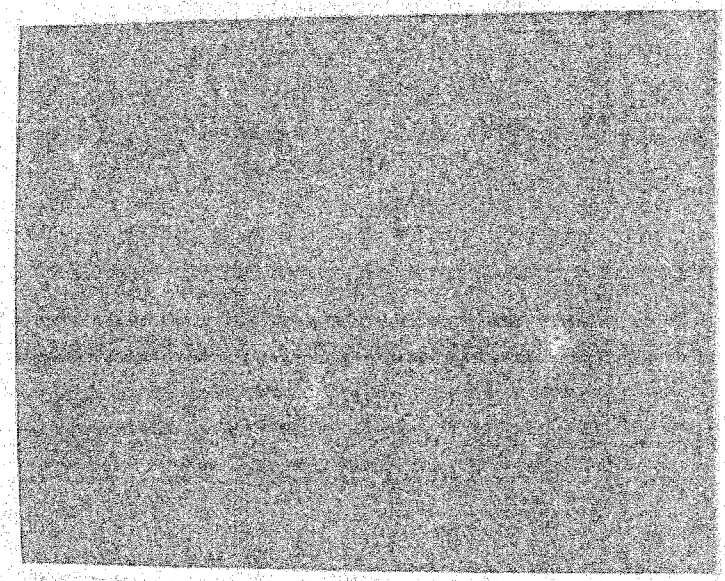
V20763

Belinea 10 70 40

Color Monitor
Service Manual



"Alle Rechte vorbehalten. Dieses Service - Handbuch darf in keiner Form (Druck, Fotokopie, Mikrofilm oder anderen Verfahren) - auch nicht in Auszügen - ohne vorherige schriftliche Genehmigung des Herstellers re - produziert oder unter Verwendung elektronischer Systeme verarbeitet, vervielfältigt oder verbreitet werden."

CAUTION:

Before servicing this chassis, read the

"IMPORTANT SERVICE SAFETY INFORMATION"

on next page of this manual.

IMPORTANT SERVICE SAFETY INFORMATION

Operation of monitor outside of cabinet or with back removed involves a shock hazard. Work on these models should only be performed by those who are thoroughly familiar with precautions necessary when working on high voltage equipment.

Exercise care when servicing this chassis with power applied. Many B plus and high voltage RF terminals are exposed which, if carelessly contacted, can cause serious shock or result in damage to the chassis. Maintain interconnecting ground lead connections between chassis and escutcheon picture tube dag when operation chassis.

This monitor has a "polarized" AC line cord.The AC plug is designed to fit into standard AC outlets in one direction only. The wide blade connects the "ground side" and the narrow blade connects to the "hot side" of the AC line. This assures that the monitor is properly grounded to the house wiring. If an extension cord must be used,make sure it is of the "polarized" type.

Since the chassis of this monitor is connected to one side of the AC supply during operation,service should not be attempted by anyone not familiar with the precautions necessary when working on this type of equipment.

When it is necessary to make measurements or tests with AC power applied to the monitor chassis, an Isolation Transformer must be used as a safety precaution and to prevent possible damaged transistors. The Isolation Transformer should be connected between the signal cord plug and the AC power outlet.

Certain HV failures can increase X-ray radiation. Monitors should not be operated with HV levels exceeding the specified rating for their chassis type. The maximum operating HV specified for the chassis used in these monitors is 24kv ± 1.0kv at zero beam current with a line voltage of 110V(220V) AC. Higher voltage may also increase possibility of failure in HV supply.

It is important to maintain specified values of all components in the horizontal and high voltage circuits and anywhere else in the monitor that could cause a rise in high voltage, or operating supply voltages, No changes should be made to the original design of the monitor.

Components shown in the shaded areas on the schematic diagram and/or identified by ⚠ in the replacement parts list should be replaced only with exact Factory recommended replacement parts. The use of unauthorized substitute parts may create a shock, fire , X-radiation, or other hazard.

To determine the presence of high voltage, use an accurate, high impedance, HV meter connected between second anode lead and the CRT dag grounding device. When servicing the High Voltage System remove static charge from it by connecting 10K ohm resistor in series with an insulated wire (such as a test probe) between picture tube dag and 2nd anode lead (AC line cord disconnected from AC supply).

The picture tube used in this monitor employs integral impulsion protection. Replace with tube of the same type number for continued safety. Do not lift picture tube by the neck. Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage completely. Keep others without shatterproof goggles away.

Before returning the monitor to the user, perform the following safety checks:

1. Inspect all lead dress to make certain that are not pinched or lodged between the chassis and other metal parts in the monitor.

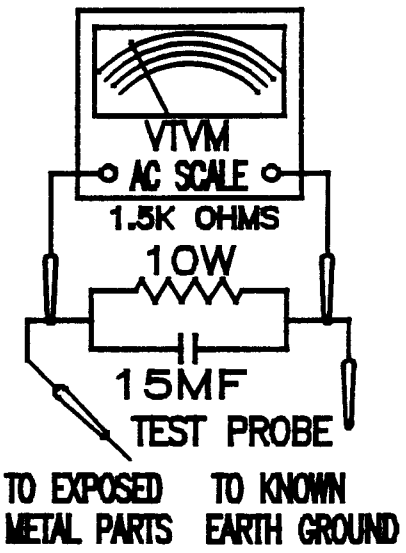
2. Replace all protective devices such as non-metallic control knobs, insulating fish-papers, cabinet backs, adjustment and compartment covers or shields, isolation resistor capacitor networks, mechanical insulators, etc.

3. To be sure that no shock hazard exists, a check for the presence of leakage current should be made at each exposed metal part having a return path to the chassis (cabinet metal,screw heads, knobs and/or shafts, escutcheon, etc.) in the following manner.

Plug the AC line cord directly into a 110V(220V) AC receptacle. (Do not use an Isolation Transformer during these checks.) All checks must be repeated with the AC line cord plug connection reversed.(If necessary, a non-polarized adapter plug must be used only for the purpose of completing these checks.)

If available, measure current using an accurate leakage current tester. Any reading of 0.35 MA or more is excessive and indicates a potential shock hazard which must be corrected before returning the monitor to the owner.

If a reliable leakage current tester is not available, this alternate method of measurement should be used. Using two clip leads, connect a 1500 ohm, 10 watt resistor paralleled by a 0.15 μF capacitor in series with a known earth ground, such as a water pipe or conduit and the metal part to be checked. Use a VTVM or VOM with 1000 ohms per volt, or higher, sensitivity to measure this AC voltage drop across the resistor. Any reading of 0.35 volt RMS or more is excessive and indicates a potential shock hazard which must be corrected before returning the monitor to the owner.



CONTENTS

Specifications 1

Disassembly Instructions 2

Theory of Operation 3

Location of Controls 4

Electrical Adjustments 5

Display Mode & Timing Chart 10

Troubleshooting Guide 12
1. NO POWER 12
2. NO DEGAUSSING 13
3. NO RASTER 14
4. PICTURE OR COLOR MISSING 15
5. H.V. SYNC IS ABNORMAL 16
6. HOR. WIDTH CAN NOT ADJUST 16
7. ABNORMAL BLANKING 17
8. NO VERTICAL SCAN OR VERTICAL SIZE CAN NOT ADJUST 17
9. DIGITAL CONTROL FAILURE 18
10.ABNORMAL OSD 19

Block Diagram 20

IC/Transistor Block Diagrams 21

Electrical Replacement Parts List (Rev: 1.7) 23

Exploded View/Parts List 33

PCB Views 34
CRT Board (Rev: 2.0) 34
Main Board (Rev: 2.2) 35

Schematic Diagrams (Rev: 1.2) 37

SPECIFICATIONS

• Picture Tube:	Visible Size	: 17" diagonal
	Deflection	: 90 degree deflection
	Dot Pitch	: 0.26mm
	Phosphor	: P22
• Input Signal:	Video	: Analog
	Sync	: Separate TTL level
• Scanning Frequency:	Horizontal	: 30 - 82 KHz
	Vertical	: 47 - 120 Hz
• Display Area:	Horizontal	: 300 ± 5 mm (STANDARD MODE)
	Vertical	: 225 ± 5 mm
• Bandwidth:	100 MHz (-3dB)	
• Resolution:	1280 x 1024/75 Hz(NI)	
• Power Source:	100 to 240 Vac 60/50 Hz	
• Power Consumption:	150 W (MAX)	
• Input Connector:	D-15 PIN	
• Display Color:	Limited only by the VGA Card	
• Front Control:	8 Tack SW	
• Rear Control:	Power SW	
• Environment:	Operating Temperature	: 0°C to 40°C
	Operating Humidity	: 20% to 80%
	Nonoperating Temperature	: -20°C to 65°C
	Nonoperating Humidity	: 10% to 85%
• Dimensions:	426mm(W)x443mm(H)x425mm(D)(With Base)	
• Weight:	Approx. 17 Kgs(NET)	

DISASSEMBLY INSTRUCTIONS

CABINET BACK REMOVE (Figure 3)

1. Remove the screws located on the back cover of the monitor bottom.
2. Gently slide the rear cover backwards until free of the monitor chassis.

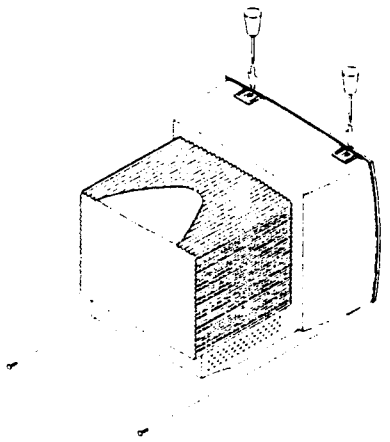


Figure 3

MAIN PCB REMOVAL (Figure 4)

1. Discharge the residual high voltage from the CRT Anode through a 100KΩ resister to the flyback Transformer mounting bracket.
2. Remove the Anode Cap from the CRT.
3. Remove all connectors and jacks from the Main PCB.
4. Gently slide the Main PCB backwards until free of the mounting brackets. Be careful not to damage the switches and control shafts.

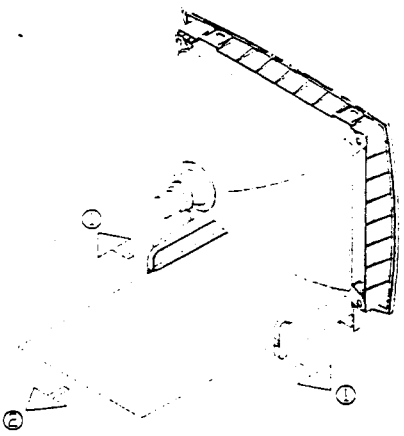


Figure 4

CRT REMOVAL (Figure 5)

1. Place the monitor face down on a soft surface.
2. Remove the CRT and place it on a soft surface.

NOTE: Do not move the deflection yoke and magnet assembly attached to the CRT neck. Handle these assembly carefully to avoid damaging them.

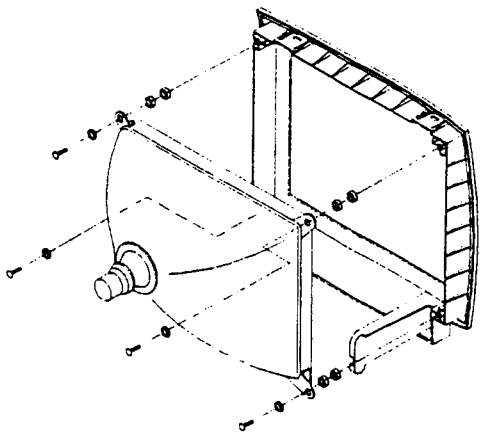


Figure 5

THEORY OF OPERATION

1. VIDEO AND OSD(On Screen Display) AMPLIFIER
   IC601 (LM1281) is a full feature video amplifier with OSD input.
   Pin 1, 2, 3 is R, G, B OSD input.
   Pin 5, 8, 11 is R, G, B video input.
   Pin 23, 20, 18 is R, G, B video output.
   The video signal from IC output is fed into the cascade-type video power amplifier.

2. DEFLECTION PROCESS AND HIGH-VOLTAGE GENERATION CIRCUIT
   IC401 (TDA9105) is to control all the functions related to the horizontal and vertical deflection in a multimodes monitor. It's main functions are:
   - Positive or Negative sync polarities.
   - Auto-sync horizontal processing.
   - Auto-sync vertical processing.
   - East/West signal processing block.
   - H-PLL lock/unlock identification.
   - Safety blanking output.

   T401, Q402, Q403, T403, IC401, C455, C456, C457, D425 are used for high-voltage generation output.

3. VERTICAL DEFLECTION OUTPUT CIRCUIT
   IC301 (TDA8172) is a TV vertical deflection output circuit. It's main function are:
   - Power amplifier.
   - Flyback generator.
   - Thermal protection.

4. MONITOR ON SCREEN DISPLAY
   IC204 (MTV004) is a micro controller unit to allow colored symbols or characters to be displayed onto monitor screen.

5. MICRO-CONTROLLER
   IC201 (68P60) is an HCMOS micro-controller unit with dedicated peripherals for TV and Monitor applications. It's main function are:
   - Include Run, Wait, and Stop Modes.
   - 8Kx8 ROM, 256x8 RAM
   - Sync Processor for video timing analysis
   - Watchdog for system reliability and integrity.
   - 12 8-bit PWM/BRM Digital to Analog outputs.

6. SWITCHING POWER SUPPLY
   AC power is rectified by D102, then filtered by C107.
   Power is transferred by T101 to the secondary circuit.
   IC101 and IC404 control and stabilize the output voltage.
   VR101 adjusts the output voltage.
   VR402 adjusts the DC to DC output voltage.
   Q102 is the over voltage protector.

LOCATION OF CONTROLS

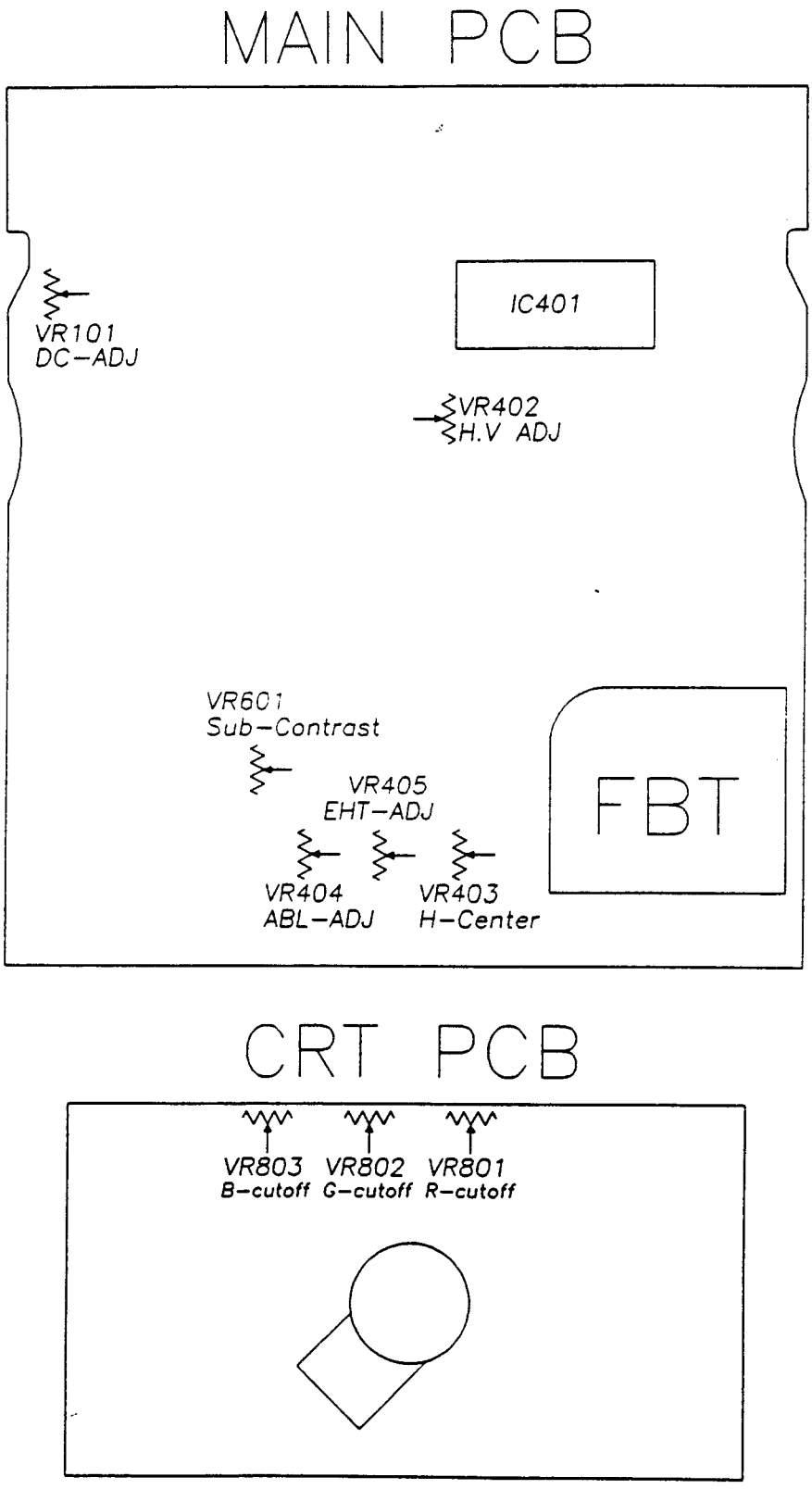


Figure 6

ELECTRICAL ADJUSTMENT

(1) BEFORE ADJUSTMENT

1. Equipment:
   Video Signal Generator (Quantum Data Model 903/Chroma Model 2135)
   Personal Computer or VGA card
   Color Analyzer (MINOLTA CA-100)
2. Set all SVR to half (The SVR SET on central point).
3. AC power input: 100 to 240 Vac 60/50 Hz.
4. Check item: MODE 1 to MODE 7 (refer DISPLAY MODE & TIME CHART section).
5. Before starting adjust each item makeing sure the MODE and Timing is matched with each adjustment item.

(2) B+(14V) ADJUSTMENT (VR101)

1. Input voltage 110Vac to monitor.
2. Set Video Signal Generator to MODE 2 (31 KHz) and input to monitor.
3. Set Brightness and Contrast to MIN.
4. Repeatedly press < or > key to select Horizontal width. (The ⊟ symbol changes color.)
5. Press + or — to adjust Horizontal width = 300 ± 5 mm.
6. Turn FBT screen VR to make raster = 0 FL.
7. Connect Digital Voltmeter between Q206 "C".
8. Adjust B+ to 14.3V(± 0.1V) by turning VR101.
9. Check $V_{D114(N)}$ = 7.2 ± 0.3 V_{DC}, $V_{D112(N)}$ = 50 ± 1.5 V_{DC}, $V_{D115(N)}$ = 80 ± 1.5 V_{DC}, $V_{D115(P)}$ = -12 ± 0.3 V_{DC}.

(3) HIGH VOLTAGE ADJUSTMENT (VR402)

1. Set Video Signal Generator to MODE 2 (31 KHz) and input to monitor.
2. Connect High Voltage Meter between Anode Cap and GND.
3. Repeatedly press < or > key to select Horizontal width. (The ⊟ symbol changes color.)
4. Press + or — to adjust Horizontal width = 300 ± 5 mm.
5. Set Brightness to make raster = 0 FL.
6. Set Contrast to MIN.
7. Adjust VR402 to let High voltage = 26.0 ± 0.1KV.
8. Set Video Signal Generator to MODE 7 (80 KHz) and input to monitor.
9. Check High voltage value in -0.3KV ~ -0.5KV.

(4) EHT ADJUSTMENT (VR405)

1. Set Video Signal Generator to MODE 2 (31 KHz) and input to monitor.
2. Repeatedly press < or > key to select Horizontal width. (The ⊟ symbol changes color.)
3. Press + or — to adjust Horizontal width = 300 ± 5 mm.
4. Repeatedly press < or > key to select Vertical size. (The ⊞ symbol changes color.)
5. Press + or — to adjust Vertical size = 225 ± 5 mm.
6. Set Contrast to MIN.

7. Set Brightness to make raster = 0 FL.
8. Connect Digital Voltmeter between IC404 pin 1 and GND.
9. Turning VR405 and checking $V_{IC403\ PIN\ 1}$ = 9.0 ~ 9.5V_{DC}.

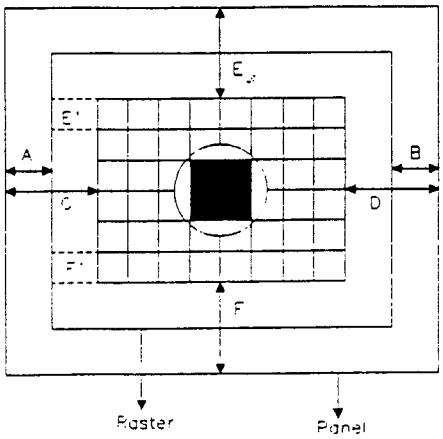


Figure 7

(5) MODE 7 (80 KHz) CHECK
1. X-RAY test: short D429 to check X-RAY circuit (screen shut down).
2. Adjust VR403 let B-A = 1 ± 1 mm (See Fig 7).

(6) DYNAMIC FOCUS CHECK
1. Connect Scope between FBT PIN 12 and GND.
2. Check Vertical Frequency Pallabola wave = 150 Vpp ± 20 Vpp.
3. Check Horizontal Frequency Pallabola wave = 300 Vpp ± 50 Vpp.

(7) VERTICAL SIZE ADJUSTMENT
1. Set Video Signal Generator to MODE 1 (Crosshatch Pattern) and input to monitor. (Mode may be changed 1 to 7 in sequence)
2. Repeatedly press < or > key to select Vertical size. (The ⊞ symbol changes color.)
3. Press + or — to adjust Vertical size = 225 ± 2 mm.

(8) VERTICAL CENTER ADJUSTMENT
1. Set Video Signal Generator to MODE 1 (Crosshatch Pattern) and input to monitor. (Mode may be changed 1 to 7 in sequence)
2. Repeatedly press < or > key to select Vertical center. (The ⊟ symbol changes color.)
3. Press + or — to adjust Vertical center ≤ 2 mm. (See Fig 7, | E-F | ≤ 2 mm)

(9) HORIZONTAL WIDTH ADJUSTMENT
1. Set Video Signal Generator to MODE 1 and input to monitor. (Mode may be changed 1 to 7 in sequence)
2. Repeatedly press < or > key to select Horizontal width. (The ⊟ symbol changes color.)
3. Press + or — to adjust Horizontal width = 300 ± 3 mm.

(10) HORIZONTAL PHASE ADJUSTMENT

1. Set Video Signal Generator to MODE 1 and input to monitor. (Mode may be changed 1 to 7 in sequence)
2. Repeatedly press < or > key to select Horizontal phase. (The ⊡ symbol changes color.)
3. Press + or — to adjust Horizontal phase ≤ 2 mm. (See Fig 7, | C-D | ≤ 2 mm)

(11) PINCUSHION ADJUSTMENT

1. Set Video Signal Generator to MODE 1 (Crosshatch Pattern) and input to monitor. (Mode may be changed 1 to 7 in sequence)
2. Repeatedly press < or > key to select Pincushion. (The ⊠ symbol changes color.)
3. Press + or — to let X ≤ 2.0 mm (See Fig 14).

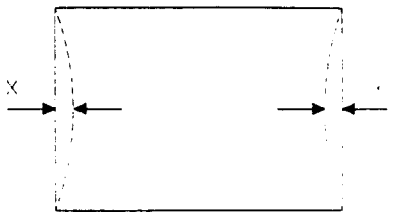


Figure 8

(12) TRAPEZOID ADJUSTMENT

1. Set Video Signal Generator to MODE 1 (Crosshatch Pattern) and input to monitor. (Mode may be changed 1 to 7 in sequence)
2. Repeatedly press < or > key to select Pincushion. (The ⏢ symbol changes color.)
3. Press + or — to let Y ≤ 2.0 mm (See Fig 15).

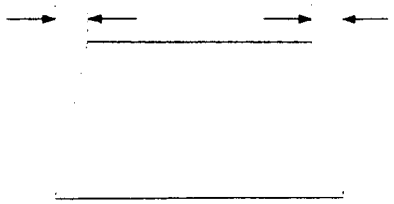


Figure 9

(13) ROTATION(TILT) ADJUSTMENT

1. Set Video Signal Generator to MODE 1 (Crosshatch Pattern) and input to monitor. (Mode may be changed 1 to 7 in sequence)
2. Repeatedly press < or > key to select Pincushion. (The ⧈ symbol changes color.)
3. Press + or — to let Rotation ≤ 1.5 mm.

(14) SAVE FUNCTION

1. The monitor provides auto save function to save item(8)~(14) settings change. The auto save function acts when
   i. Mode and adjustment change immediately.
   ii. Mode persists and function adjustment changes at 10 seconds later.
2. FOR TECHNICIAN ONLY : The monitor provides another save methode to save settings into factory standard area of EEPROM for technician only.
   i. Factory standard area of EEPROM has stored the factory settings for user recall.
   ii. If it is necessary to change the EEPROM factory standard area's setting, press —, + & ◐∧ simultaneously when showing the frequency OSD picture.

(15) REPEAT ITEM (8) TO (14) AND CHANGE MODE 1 TO 7 IN SEQUENCE

(16) OSD ADJUSTMENT

1. Press ☼ ∧ or ∨ to show the brightness adjustment window of OSD message.
2. Press + or — to let OSD Height = 38 ± 3 mm.
3. Press ◐ ∧ or ∨ to show the contrast adjustment window of OSD message.
4. Press + or — to let OSD position in the picture center.

(17) RASTER WHITE BALANCE (RASTER COLOR TEMPERATURE) ADJUSTMENT

1. Set Video Signal Generator to MODE 5 (60 KHz Raster Pattern) and input to monitor.
2. Repeatedly press < or > key to select Degussing. (The ⍝ symbol changes color.)
3. Press the key + to correct display distortion or discoloration due to magnetic field interference.
4. Turn VR801(R-cutoff), VR802(G-Cutoff), VR803(B-Cutoff) clockwise to end.
5. Adjust the Screen VR of FBT until the raster can be visible.
6. Check the pictur showing what king color is.
7. Adjust the VR (VR801 or VR802 or VR803) without showing the color on the picture until the color analyzer appear:
   x=0.281 ± 5 %
   y=0.311 ± 5 %
8. Adjust the Screen VR of FBT to let raster = 1.0 ~ 1.2 FL.
9. Check the raster keep in range 1.0 ~ 1.4 FL. When adjust raster color temperature.
10. Check Item 5.~8. again.

(18) WHITE BALANCE (COLOR TEMPERATURE) ADJUSTMENT

1. Set Video Signal Generator to MODE 5 (60 KHz Bright Pattern) and input to monitor.
2. Set the Contrast Y = 10~15 FL.
3. Set the Brightness to MIN.
4. Repeatedly press < or > key to select R-gain and G-gain. (The ◑ symbol changes color.)
5. Adjust — and + keys until the color analyzer appear:
   x=0.281 ± 5 %
   y=0.311 ± 5 %
6. Set the Contrast to MAX and check the color temperature. If color temperature over the specification, repeat steps 2.~11.
7. Set the Contrast to MIN and check the screen is gray.
8. Set the Contrast to MAX and check the screen is full white.
9. Check color bar pattern.
10. VR601 is for sub-contrast adjustment.

(19) BRIGHTNESS ADJUSTMENT

1. Set Video Signal Generator to MODE 5 (60 KHz Raster Pattern) and input to monitor.
2. Make sure video input = 0.7 $V_{P\text{-}P}$.
3. Set the Contrast to MIN and the Brightness to Max.
4. Check raster = 1.0~1.4 FL by adjust FBT screen VR).
5. Press ☼ ∨ key let raster = 1.0 ± 0.05 FL.
6. Set to full white pattern, check CRT center picture = 10~15 FL.
7. Set Contrast to Max.
8. Set 1-MOSAIC(3") pattern.
9. Adjust VR601(sub-contrast) let CRT center block keep in range 55~65 FL. Factory sets 60 FL.

(20) ABL ADJUSTMENT(VR404)

1. Set Video Signal Generator to MODE 2 (31 KHz Full White Pattern) and input to monitor.
2. Make sure video input = 0.7 V_{P-P}.
3. Adjust VR404(clockwise) let picture center = 30 FL (30 ± 5 FL).
4. Check the picture around lights up to 70%.

(21) FOCUS ADJUSTMENT

1. Set Video Signal Generator to MODE 7 (80K White Pattern) and input to monitor.
2. Set Brightness to MIN make raster = 0 FL.
3. Set Contrast Y = 20~25 FL.
4. Change Video Signal Generator to MODE 7 (80K "H" Pattern)
5. Adjust FBT FOCUS VR to make the CRT display clear.

(22) CONVERGENCY ADJUSTMENT

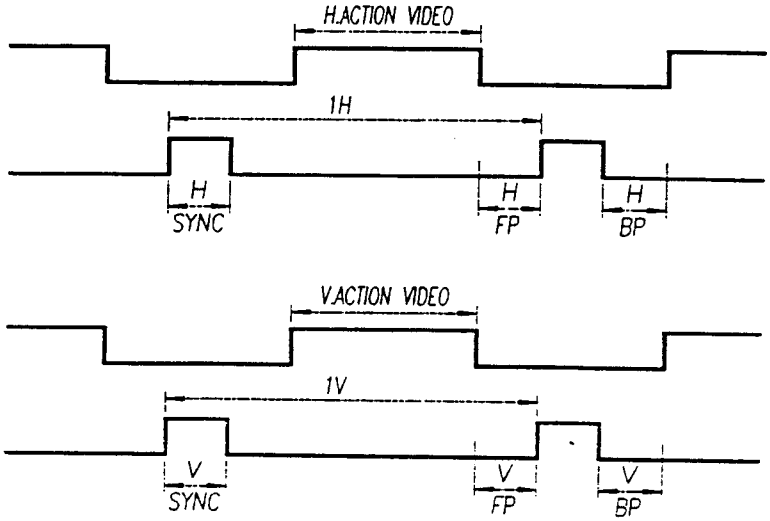
1. Set Video Signal Generator to MODE 2 (31 KHz Purple Crosshatch Pattern) and input to monitor.
2. Check red and blue color of picture center is overlap or not. If it is not overlap, adjust 4 magnetic pole of CRT YOKE.
3. Set Video Signal Generator to MODE 2 (31 KHz White Crosshatch Pattern) and input to monitor.
4. Check red, green and blue color of picture center is overlap or not. If it is not overlap, adjust 6 magnetic pole of CRT YOKE.
5. Fasten and glue magnetic pole tight, if you adjust it.

(23) POWER SAVING CHECK

1. Equipment: Video Signal Generator
   i. Quantum Data Model 901
   ii. Chroma Model 2135
2. Set Stand-by, Suspend and Off states into equipment as following.
   i. Stand-by state ⇒ H-sync ≤ 10K Hz
   ii. Suspend state ⇒ V-sync ≤ 10 Hz
   iii. Off state ⇒ H-sync ≤ 10K Hz and V-sync ≤ 10 Hz
3. AC power input: 100 to 240 Vac 60/50 Hz.
4. Set Video Signal Generator(Chroma 2135) to Stand-by and input to monitor. Check power consumption below 15W in 5 seconds.
5. Set Chroma 2135 to MODE 2 and check the display is normal in 3 seconds.
6. Set Chroma 2135 to Suspend and check power consumption below 15W in 5 seconds.
7. Set Chroma 2135 to MODE 2 and check the display is normal in 3 seconds.
8. Set Chroma 2135 to Off and check power consumption below 5W in 5 seconds.
9. Set Chroma 2135 to MODE 2 and check the display is normal.

DISPLAY MODE & TIMING CHART

This monitor provides 7 preset modes for match normal display card and 18 user's modes for special display card. As below chart and table are showing the detail value of preset mode. Please service technician accords table to set video signal generator for input/test/adjust the monitor.

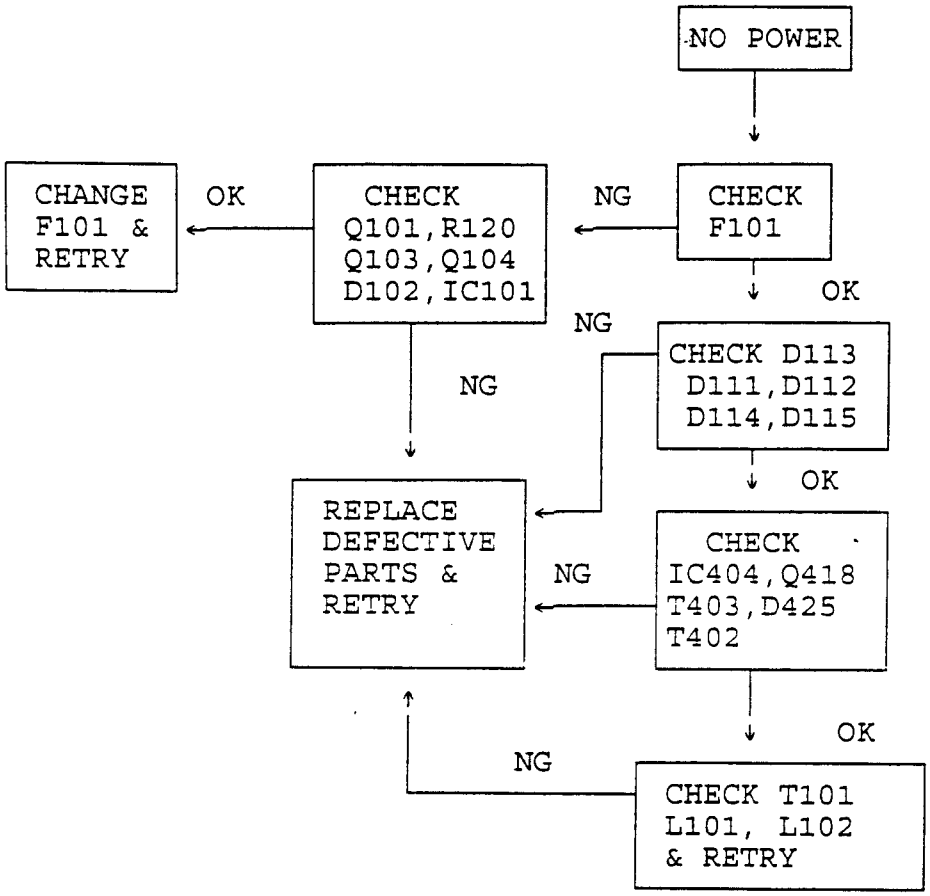


Standard	IBM/VGA	IBM/VGA	IBM/8514A	VESA
Compatibility	MODE 1	MODE 2	MODE 3	MODE 4
Resolution	640x400	640x480	640x480	800x600
H. Polarity	—	—	—	+
H. Frequency	31.469KHz	31.469KHz	37.500KHz	46.875KHz
H. Front Porch	0.636 uS	0.636 uS	0.508 uS	0.323 uS
H. Sync	3.813 uS	3.813 uS	2.032 uS	1.616 uS
H. Back Porch	1.907 uS	1.907 uS	3.810 uS	3.232 uS
H. Action Video	25.422 uS	25.422 uS	20.317 uS	16.485 uS
V. Polarity	+	—	—	+
V. Frequency	70.086 Hz	59.941 Hz	75.000 Hz	75.000 Hz
V. Front Porch	0.381 mS	0.318 mS	0.027 mS	0.021 mS
V. Sync	0.064 mS	0.064 mS	0.080 mS	0.064 mS
V. Back Porch	1.112 mS	1.050 mS	0.427 mS	0.448 mS
V. Action Video	12.711 mS	15.30 mS	12.800 mS	12.800 mS

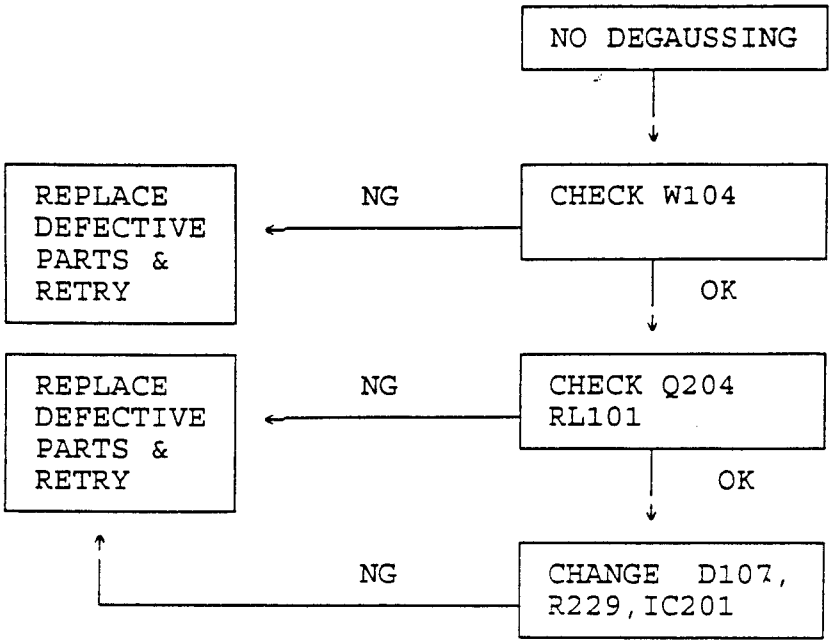
Standard	VESA	VESA	VESA
Compatibility	MODE 5	MODE 6	MODE 7
Resolution	1024x768	1280x1024	1280x1024
H. Polarity	—	+	+
H. Frequency	60.023K Hz	63.974K Hz	79.976K Hz
H. Front Porch	0.203 uS	0.590 uS	0.119 uS
H. Sync	1.219 uS	1.180 uS	1.067 uS
H. Back Porch	2.235 uS	2.065 uS	1.837 uS
H. Action Video	13.206 uS	11.797 uS	9.481 uS
V. Polarity	—	+	+
V. Frequency	75.029 Hz	60.013 Hz	75.025 Hz
V. Front Porch	0.017 mS	0.016 mS	0.013 mS
V. Sync	0.050 mS	0.047 mS	0:038 mS
V. Back Porch	0.466 mS	0.594 mS	0.475 mS
V. Action Video	12.795 mS	17.067 mS	12.804 mS

TROUBLESHOOTING

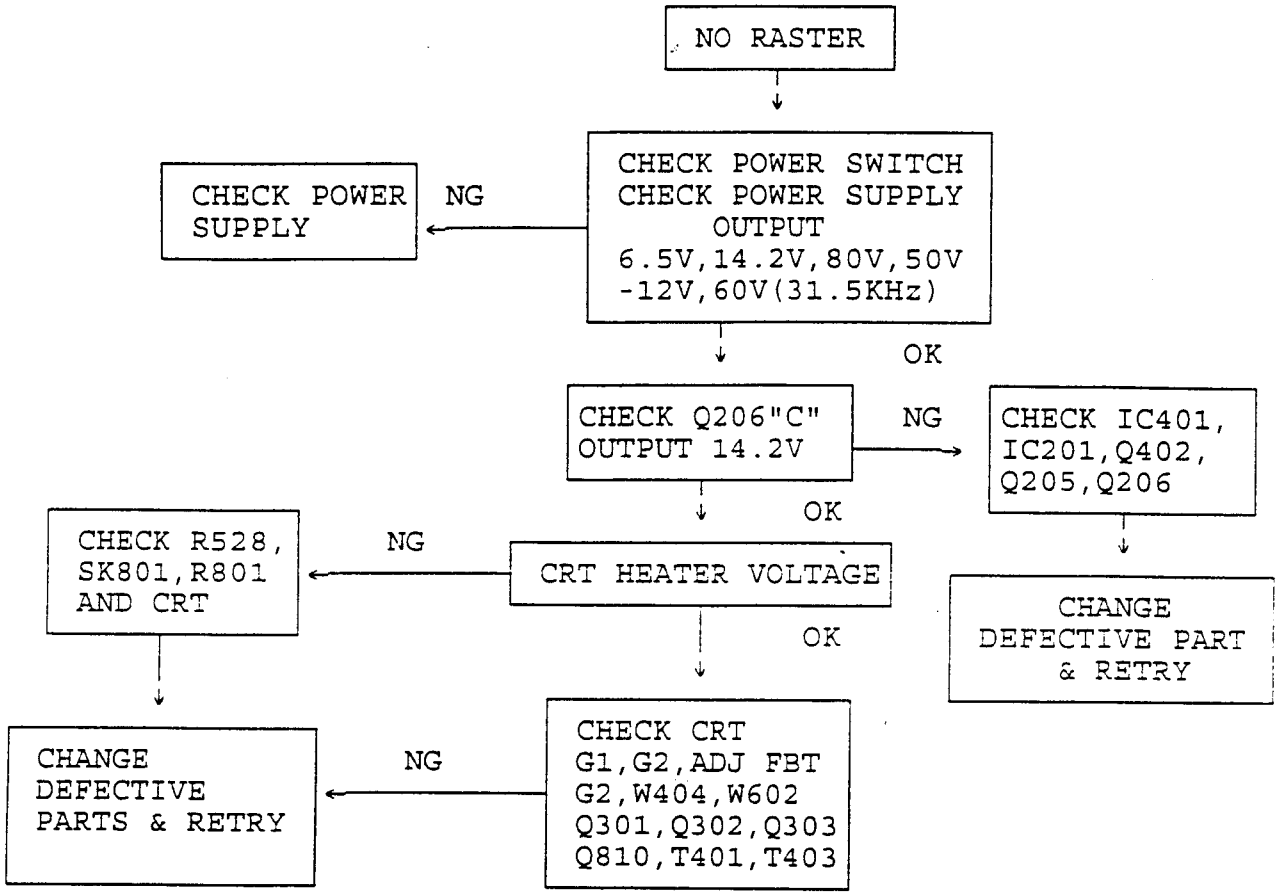
1. NO POWER



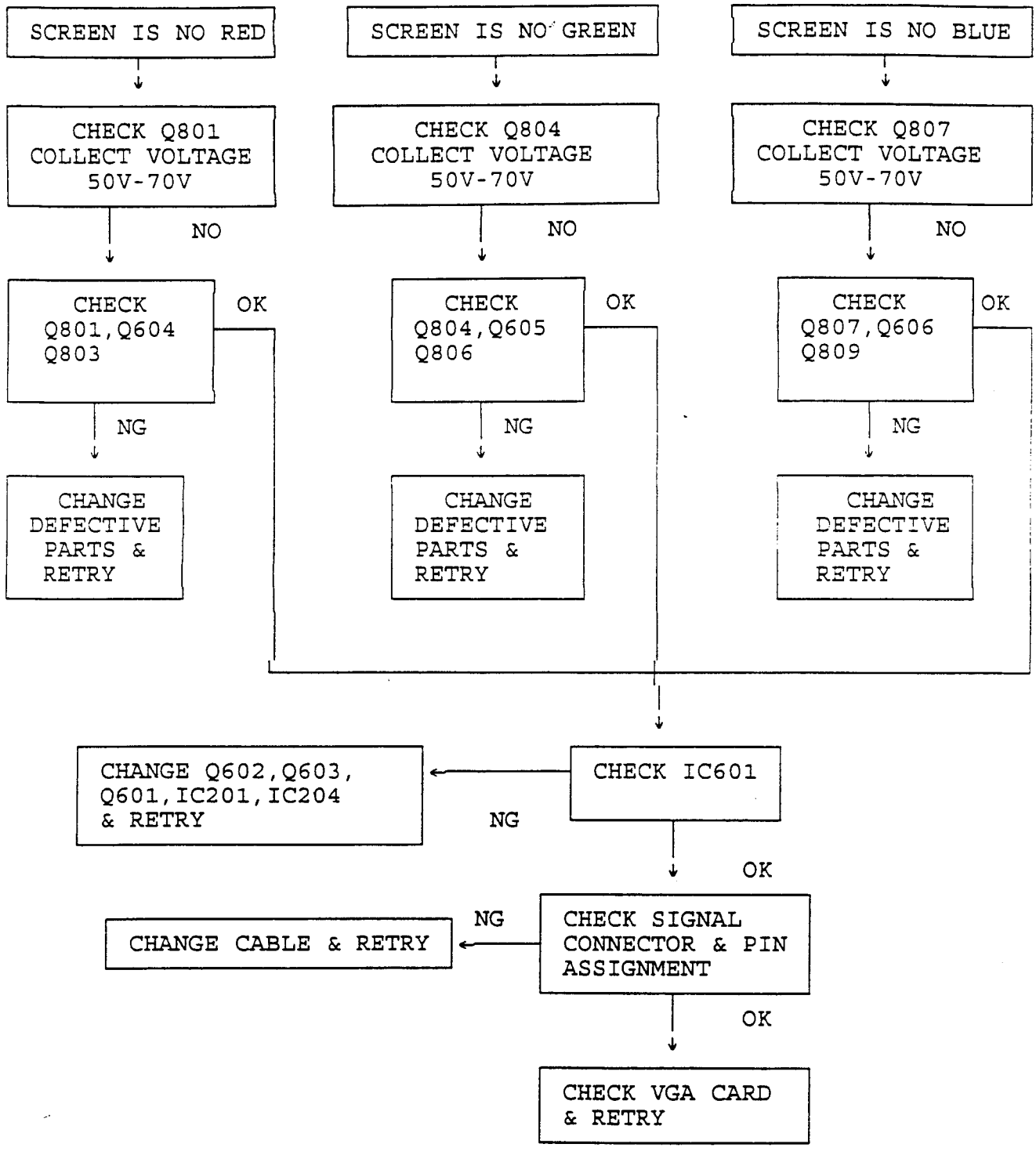
2. NO DEGAUSSING



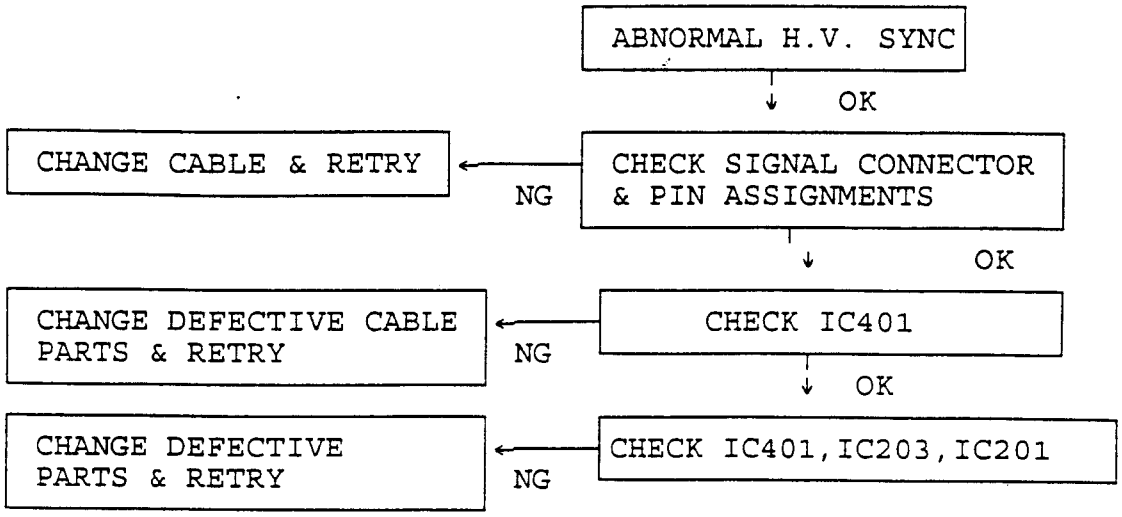
3. NO RASTER


NO RASTER
CHECK POWER SWITCH
CHECK POWER SUPPLY
OUTPUT
6.5V,14.2V,80V,50V
-12V,60V(31.5KHz)
NG
CHECK POWER SUPPLY
OK
CHECK Q206"C"
OUTPUT 14.2V
NG
CHECK IC401,
IC201,Q402,
Q205,Q206
OK
CHECK R528,
SK801,R801
AND CRT
NG
CRT HEATER VOLTAGE
OK
CHANGE
DEFECTIVE PART
& RETRY
CHANGE
DEFECTIVE
PARTS & RETRY
NG
CHECK CRT
G1,G2,ADJ FBT
G2,W404,W602
Q301,Q302,Q303
Q810,T401,T403

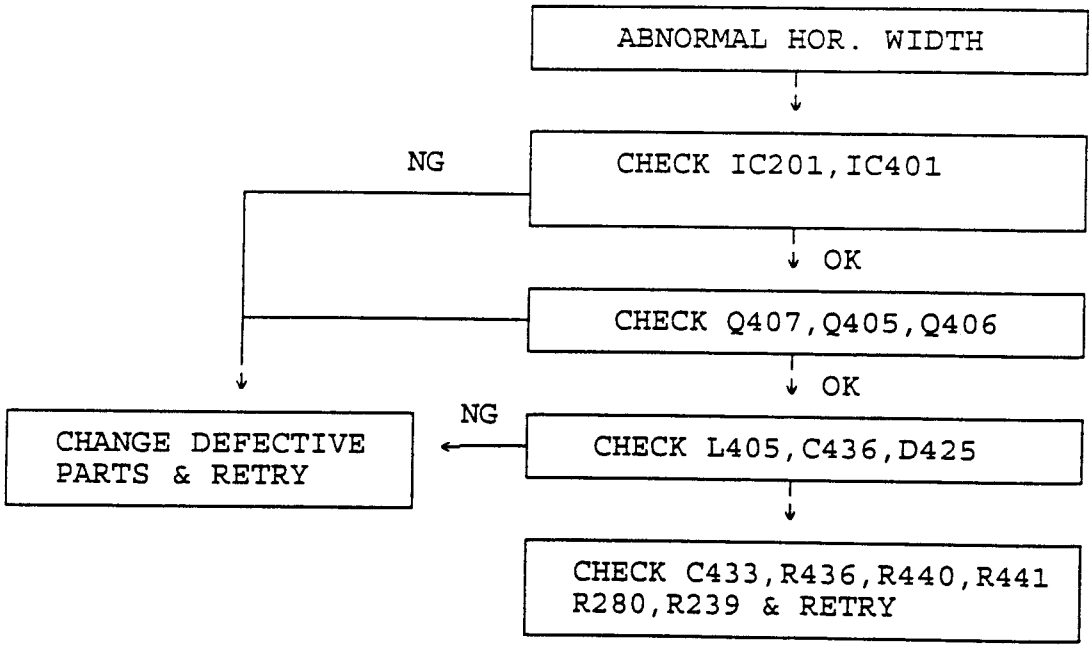
4. PICTURE OR COLOR MISSING



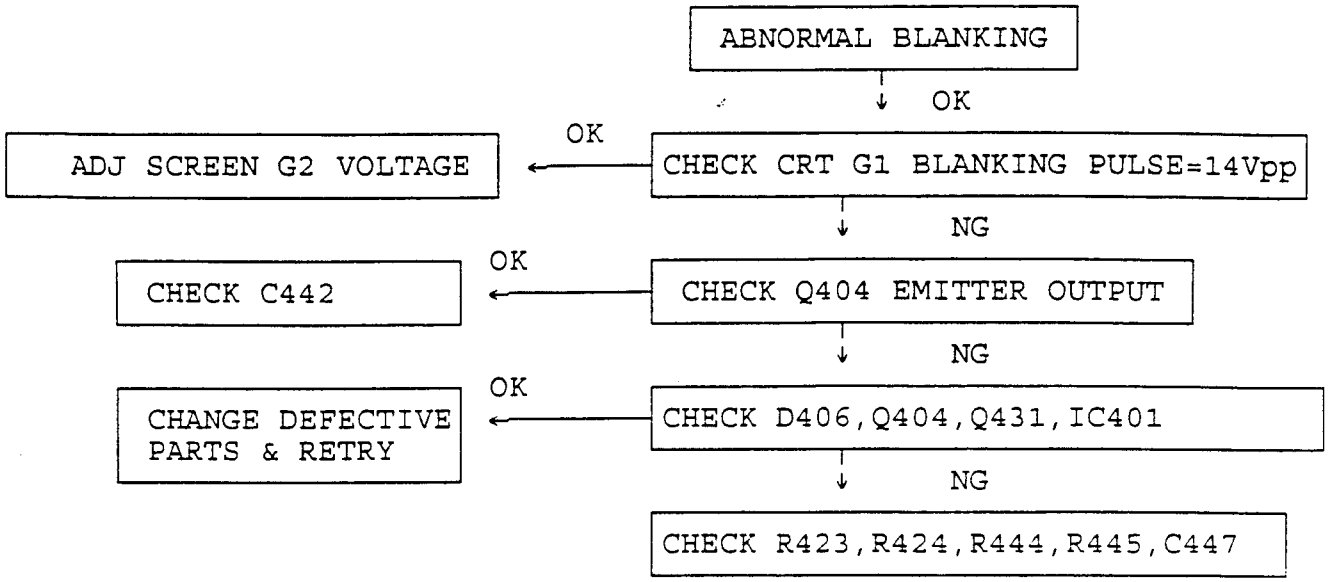
5. H.V. SYNC IS ABNORMAL



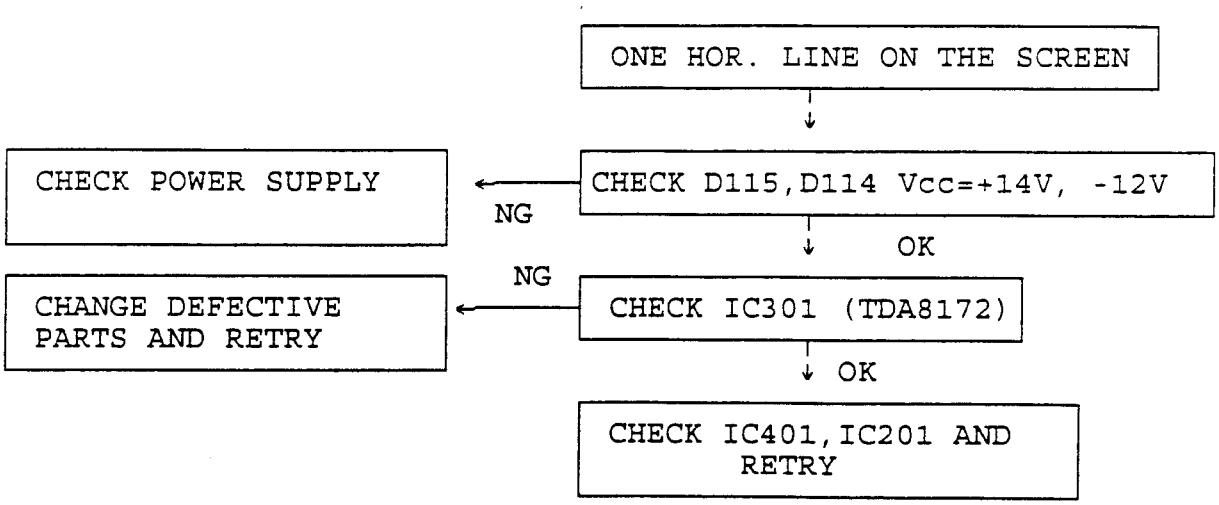
6. HOR. WIDTH CAN NOT ADJUST



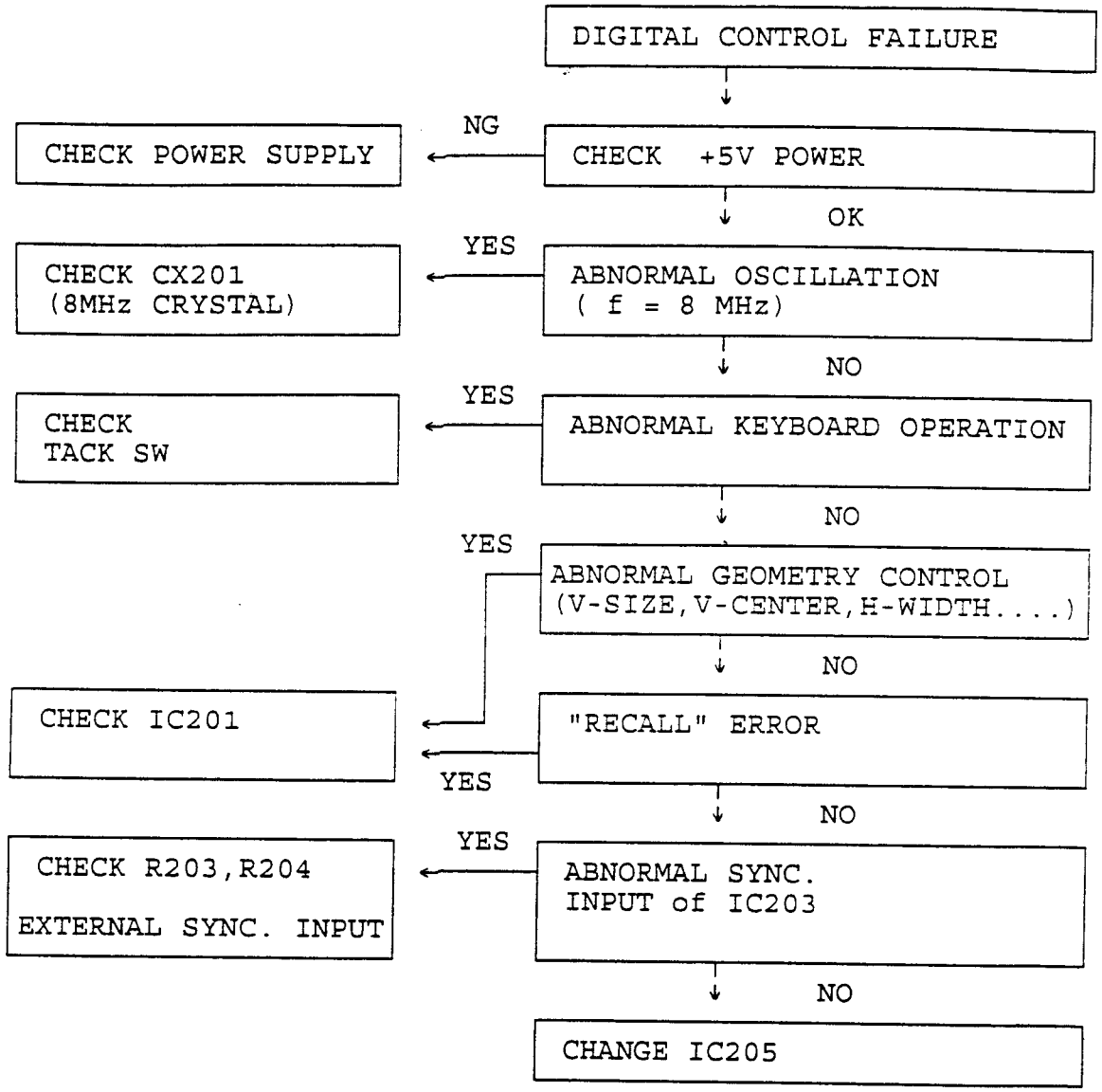
7. ABNORMAL BLANKING



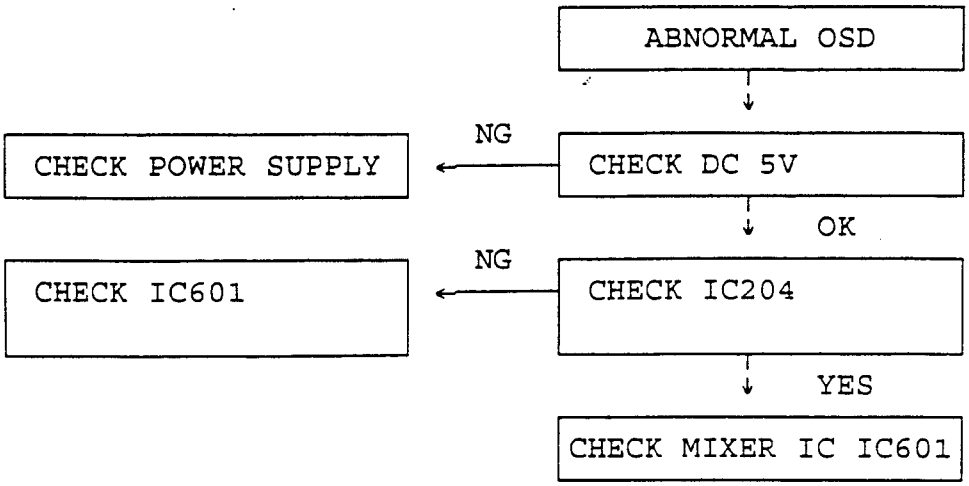
8. NO VERTICAL SCAN OR VERTICAL SIZE CAN NOT ADJUST



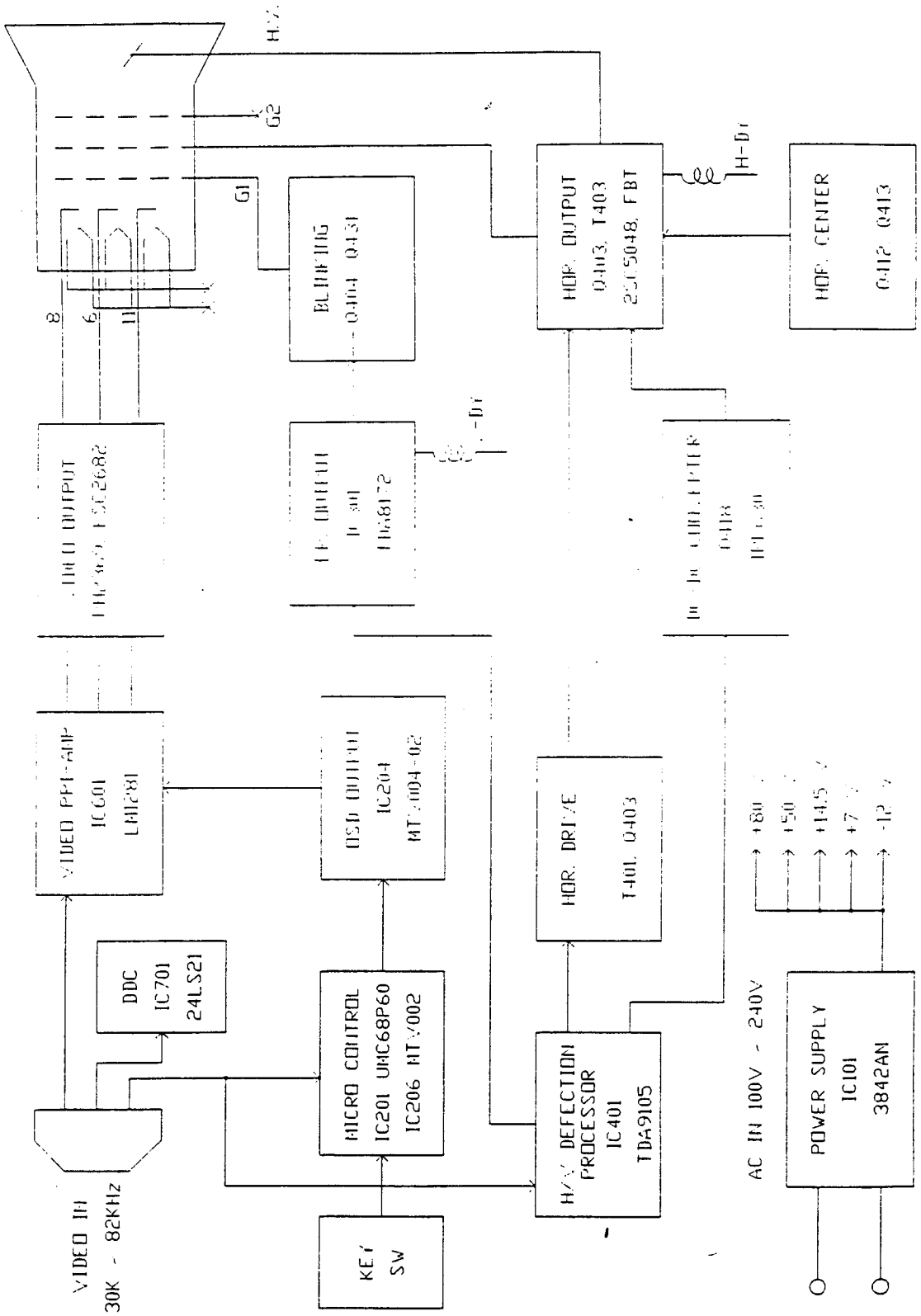
9. DIGITAL CONTROL FAILURE



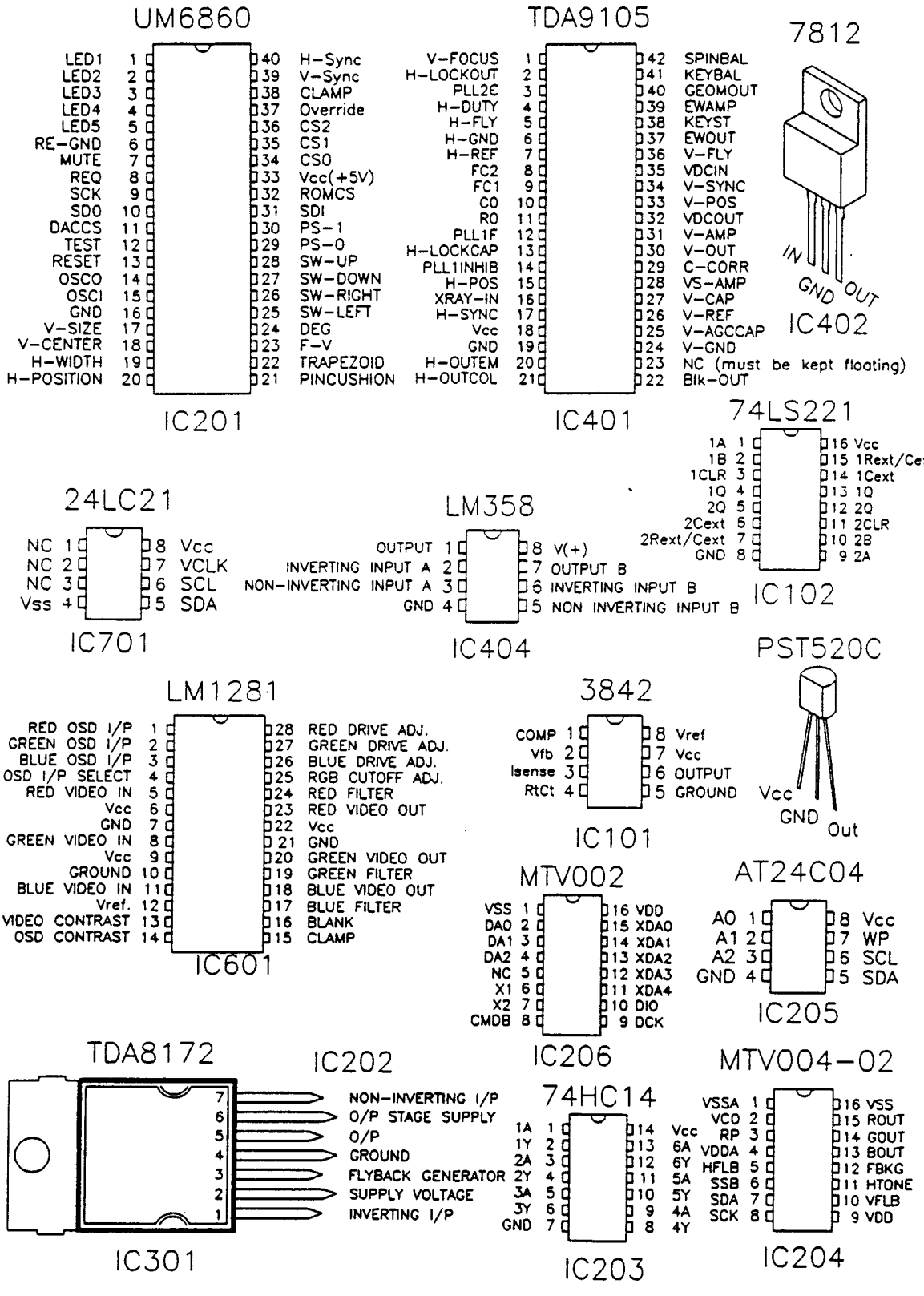
10. ABNORMAL OSD



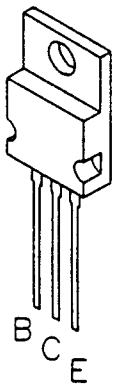
BLOCK DIAGRAM



IC/TRANSISTOR BLOCK DIAGRAMS

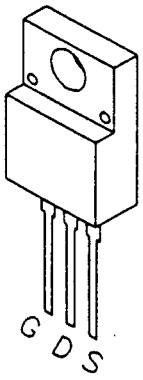


C5048



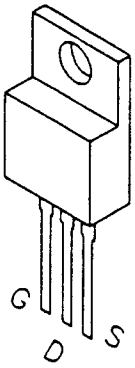
Q403

FS7KM-12



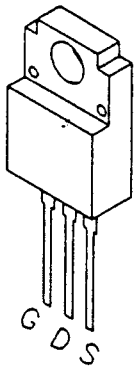
Q101

FS10UM-5
IRF630



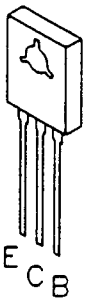
Q418
Q425
Q426

D1406
D2107



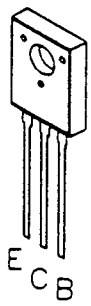
Q407

D882P
C1162



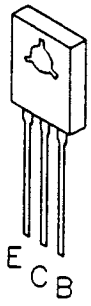
Q412

KSC3953



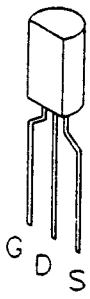
Q801
Q804
Q807

B772



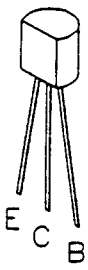
Q206
Q208
Q413

K941



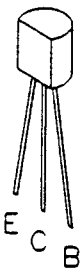
Q402

KSA733



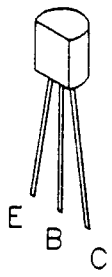
Q420
Q427
Q601

C1959
C1213



Q424
Q428
Q417

2N3904

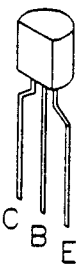


Q404
Q431

BF423

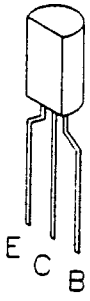
Q422

PH2369



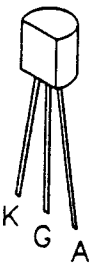
Q604
Q605
Q606

C2705



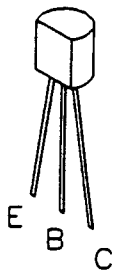
Q810

MCR100-6



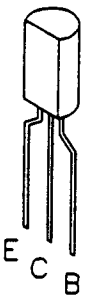
Q102
Q104

HTL145



Q432
Q415

KSA916
B647A

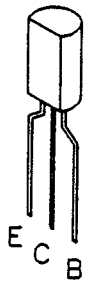


Q803
Q806
Q809

A673

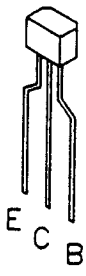
Q429
Q405
Q406

C1384A



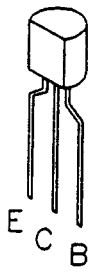
Q201

DTC114ES
C3402



Q103
Q421
Q430
Q603

C945



Q204 Q410
Q205 Q416
Q207 Q602
Q408

ELECTRICAL REPLACEMENT PARTS LIST

Date:APR/29/1996 Version: 1.1

Position	Parts No.	Description
	1T0K2N26N0	SHIELD CRT A SPTE t = 0.3 mm DH-1764
	250K2N01N3	FRONT PANEL DH-1782
	250K2N02N8	REAR CASE DH-1782
	2F120N42N3	REAR COVER DH-1570
	2P028N37N9	LED LENS 28.3*15.5mm RH -1450/RH-1450M
	2Y080N12N5	CABLE TIE 80mm
	3L0K2A09N2	BACK PLATE DH-1764 PC T = 0.3mm
	4T308N45N0	SCREW ISO#3x8mm 8-HEAD / TRIANGLE Ni
	4T420X06N6	SCREW TAP #4*20mm
	CE4761EM21	EC,47UF/25V,M;2
	DN41482819	DIODE 1N4148 (TFK)
BRAID	4W522N12N8	SPRING #5*22mm
BRAID	KW350051J7	WIRE 350mm BLACK UL1015 #18+2.36φ
BRAID CRT SHIELD	KQ1521W0I7	BRAID WIRE 1520mm 17"
BRAID WIRE ASS'Y	KW160061J0	WIRE 160mm BLACK UL1015 #222.36φ pin
BRAID WIRE ASS'Y	KW160061J0	WIRE 160mm BLACK UL1015 #222.36φ pin
BRAID WIRE ASS'Y	KW280061J3	WIRE 280mm BLACK UL1015 #22+2.36φ
C101	CX2242EKH8	X TYPE,0.22UF/AC250V,K;H
C104	CY4722GMZ8	Y TYPE,4700PF/AC400V,M;Z
C105	CY4722GMZ8	Y TYPE,4700PF/AC400V,M;Z
C106	CX0152EME9	X TYPE,0.1UF/AC250V,M;E
C107	CE2272GMC3	EC,220UF/400V,M;C
C108	CC0143AZC6	CC,0.01UF/1KV,Z;C
C109	CE1061HM23	EC,10UF/50V,M;2
C110	CE1071EM23	EC,100UF/25V,M;2
C112	CC1021HK23	CC,1000PF/50V,K;2
C113	CE1061HM23	EC,10UF/50V,M;2
C115	CY4722GMZ8	Y TYPE,4700PF/AC400V,M;Z
C116	CC2213AK22	CC,220PF/1KV,K;2
C117	CE4762CMZ0	EC,47UF/160V,M;Z
C118	CP2221HJ24	PEI,2200PF/50V,J;2
C119	CC0151HZ24	CC,0.1UF/50V,Z;2
C120	CE1081JMZ9	EC,1000UF/63V,M;Z
C121	CC0142HZ25	CC,0.01UF/500V,Z;2
C122	CC3311HK26	CC,330PF/50V,K;2
C124	CE1081CMA1	EC,1000UF/16V,M;A
C125	CE1081CMA1	EC,1000UF/16V,M;A
C126	CC0142HZ25	CC,0.01UF/500V,Z;2
C127	CC2213AK22	CC,220PF/1KV,K;2
C128	CE2281EMB8	EC,2200UF/25V,M;B
C130	CP1021HJ21	PEI,0.001UF/50V,J;2
C131	CC2211HK24	CC,220PF/50V,K;2
C132	CC4711HK21	CC,470PF/50V,K;2
C136	CM1021HJ28	MEF,1000PF/50V,J;2
C201	CC0151HZ24	CC,0.1UF/50V,Z;2
C202	CE2271CM28	EC,220UF/16V,M;2
C203	CC0151HZ24	CC,0.1UF/50V,Z;2
C204	CC1011HK21	CC,100PF/50V,K;2
C205	CC1011HK21	CC,100PF/50V,K;2
C206	CP0141HJ25	PEI,0.01UF/50V,J;2
C207	CE1061HM23	EC,10UF/50V,M;2
C209	CP4731HJ23	PEI,0.047UF/50V,J;2
C210	CE1071CM25	EC,100UF/16V,M;2
C211	CC0151HZ24	CC,0.1UF/50V,Z;2
C212	CP0141HJ25	PEI,0.01UF/50V,J;2
C213	CC0151HZ24	CC,0.1UF/50V,Z;2
C214	CE1061HM23	EC,10UF/50V,M;2
C218	CC2201HK22	CC,22PF/50V,K;2
C219	CC2201HK22	CC,22PF/50V,K;2
C220	CE1061HM23	EC,10UF/50V,M;2
C221	CE1061HM23	EC,10UF/50V,M;2
C222	CE1061HM23	EC,10UF/50V,M;2
C223	CE1061HM23	EC,10UF/50V,M;2
C224	CE1061HM23	EC,10UF/50V,M;2
C225	CE1061HM23	EC,10UF/50V,M;2
C226	CC0151HZ24	CC,0.1UF/50V,Z;2
C227	CC0151HZ24	CC,0.1UF/50V,Z;2
C228	CE1061HM23	EC,10UF/50V,M;2
C229	CE1061HM23	EC,10UF/50V,M;2
C230	CE1061HM23	EC,10UF/50V,M;2
C231	CE1061HM23	EC,10UF/50V,M;2
C232	CE1061HM23	EC,10UF/50V,M;2
C233	CE1061HM23	EC,10UF/50V,M;2
C234	CE1061HM23	EC,10UF/50V,M;2
C235	CE0161HM23	EC,1UF/50V,M;2
C236	CE4771AM27	EC,470UF/10V,M;2
C301	CE1081EMA9	EC,1000UF/25V,M;A
C302	CC0151HZ24	CC,0.1UF/50V,Z;2
C303	CE4751HM21	EC,4.7UF/50V,M;2
C304	CE1071EM23	EC,100UF/25V,M;2
C305	CM2241HJ25	MEF,0.22UF/50V,J;2
C306	CE1081CMA1	EC,1000UF/16V,M;A
C401	CE2271EM26	EC,220UF/25V,M;2
C402	CE1081CMA1	EC,1000UF/16V,M;A
C403	CP2221HJ24	PEI,2200PF/50V,J;2
C404	CE0161HM23	EC,1UF/50V,M;2
C405	CM2251HJ27	MEF,2.2UF/50V,J;2
C406	CC0151HZ24	CC,0.1UF/50V,Z;2
C407	CP0141HJ25	PEI,0.01UF/50V,J;2
C408	CC1011HK21	CC,100PF/50V,K;2
C409	CE1071CM25	EC,100UF/16V,M;2
C410	CP4731HJ23	PEI,0.047UF/50V,J;2
C411	CP4731HJ23	PEI,0.047UF/50V,J;2
C412	CM1021HJ28	MEF,1000PF/50V,J;2
C413	CE4761EM21	EC,47UF/25V,M;2
C414	CP4731HJ23	PEI,0.047UF/50V,J;2
C415	CE4761EM21	EC,47UF/25V,M;2
C416	CM2231HJ23	MEF,0.022UF/50V,J;2
C417	CE1061HM23	EC,10UF/50V,M;2
C418	CE1071CM25	EC,100UF/16V,M;2
C419	CE1071CM25	EC,100UF/16V,M;2
C420	CE1071CM25	EC,100UF/16V,M;2
C421	CM4741HJ22	MEF,0.47UF/50V,J;2
C422	CM2241HJ25	MEF,0.22UF/50V,J;2
C423	CC0151HZ24	CC,0.1UF/50V,Z;2
C424	CC1011HK21	CC,100PF/50V,K;2
C425	CC0151HZ24	CC,0.1UF/50V,Z;2
C426	CC0151HZ24	CC,0.1UF/50V,Z;2
C427	CC0151HZ24	CC,0.1UF/50V,Z;2
C428	CC0151HZ24	CC,0.1UF/50V,Z;2
C429	CC0151HZ24	CC,0.1UF/50V,Z;2
C430	CC0151HZ24	CC,0.1UF/50V,Z;2
C431	CB2252AM26	BP,2.2UF/100V,M;2
C432	CM2241HJ25	MEF,0.22UF/50V,J;2
C433	CB1061EM28	BP,10UF/25V,M;2
C434	CC0151HZ24	CC,0.1UF/50V,Z;2

Position	Parts No.	Description
C435	CC1011HK21	CC,100PF/50V,K;2
C436	CJ0162EJJ2	MPP,1UF/250V,J;J
C437	CE4761EM21	EC,47UF/25V,M;2
C438	CC0151HZ24	CC,0.1UF/50V,Z;2
C439	CM4741HJ22	MEF,0.47UF/50V,J;2
C440	CC1021HK23	CC,1000PF/50V,K;2
C441	CP2221HJ24	PEI,2200PF/50V,J;2
C442	CE4742EM20	EC,0.47UF/250V,M;2
C443	CP1021HJ21	PEI,0.001UF/50V,J;2
C444	CM4741HJ22	MEF,0.47UF/50V,J;2
C445	CE0161HM23	EC,1UF/50V,M;2
C446	CE1071CM25	EC,100UF/16V,M;2
C447	CM4741HJ22	MEF,0.47UF/50V,J;2
C448	CM4741HJ22	MEF,0.47UF/50V,J;2
C449	CE4751HM21	EC,4.7UF/50V,M;2
C450	CE4752EM22	EC,4.7UF/250V,M;2
C451	CC3311HK26	CC,330PF/50V,K;2
C452	CC0151HZ24	CC,0.1UF/50V,Z;2
C453	CP0141HJ25	PEI,0.01UF/50V,J;2
C454	CE1072EMB6	EC,100UF/250V,M;B
C455	CQ5623MJI0	PPS,5600PF/1.6KV,J;I
C456	CR2232JJF3	PPN,0.022UF/630V,J;F
C457	CQ6223MJH1	PPS,6200PF/1.6KV,J;H
C458	CE1071CM25	EC,100UF/16V,M;2
C459	CE1071CM25	EC,100UF/16V,M;2
C460	CC0151HZ24	CC,0.1UF/50V,Z;2
C461	CC2213AK22	CC,220PF/1KV,K;2
C462	CE0162WM26	EC,1UF/450V,M;2
C463	CM2242EJ26	MEF,0.22UF/250V,J;2
C464	CF1542GJH5	PMH(MPS),0.15UF/400V,J;H
C465	CF5642EJG6	PMH(MPS),0.56UF/250V,J;G
C466	CC1023AZ26	CC,1000PF/1KV,Z;2
C467	CC1023AZ26	CC,1000PF/1KV,Z;2
C468	CC0151HZ24	CC,0.1UF/50V,Z;2
C469	CC0151HZ24	CC,0.1UF/50V,Z;2
C470	CC2213AK22	CC,220PF/1KV,K;2
C471	CF4742EJG6	PMH(MPS),0.47UF/250V,J;G
C472	CF0152GJG6	PMH(MPS),0.1UF/400V,J;G
C473	CF0152GJG6	PMH(MPS),0.1UF/400V,J;G
C474	CF2242GJG7	PMH(MPS),0.22UF/400V,J;G
C475	CC0151HZ24	CC,0.1UF/50V,Z;2
C476	CE1061HM23	EC,10UF/50V,M;2
C477	CC1011HK21	CC,100PF/50V,K;2
C478	CC0151HZ24	CC,0.1UF/50V,Z;2
C479	CC0151HZ24	CC,0.1UF/50V,Z;2
C480	CE1072EMB6	EC,100UF/250V,M;B
C481	CP0141HJ25	PEI,0.01UF/50V,J;2
C483	CC0142HZ25	CC,0.01UF/500V,Z;2
C484	CP0151HJ27	PEI,0.1UF/50V,J;2
C485	CP2221HJ24	PEI,2200PF/50V,J;2
C486	CM4741HJ22	MEF,0.47UF/50V,J;2
C487	CC0151HZ24	CC,0.1UF/50V,Z;2
C488	CC0151HZ24	CC,0.1UF/50V,Z;2
C489	CC1023AZ26	CC,1000PF/1KV,Z;2
C601	CE2271CM28	EC,220UF/16V,M;2
C602	CC6801HK22	CC,68PF/50V,K;2
C603	CC0151HZ24	CC,0.1UF/50V,Z;2
C604	CE0161HM23	EC,1UF/50V,M;2
C606	CE0161HM23	EC,1UF/50V,M;2
C607	CC0151HZ24	CC,0.1UF/50V,Z;2
C608	CE1071CM25	EC,100UF/16V,M;2
C609	CC0151HZ24	CC,0.1UF/50V,Z;2
C610	CE0161HM23	EC,1UF/50V,M;2
C611	CC0151HZ24	CC,0.1UF/50V,Z;2
C612	CC0151HZ24	CC,0.1UF/50V,Z;2
C613	CE1061HM23	EC,10UF/50V,M;2
C614	CC0151HZ24	CC,0.1UF/50V,Z;2
C615	CC0151HZ24	CC,0.1UF/50V,Z;2
C616	CC4701HK29	CC,47PF/50V,K;2
C617	CC4711HK21	CC,470PF/50V,K;2
C618	CE0161HM23	EC,1UF/50V,M;2
C619	CE0161HM23	EC,1UF/50V,M;2
C620	CE1071CM25	EC,100UF/16V,M;2
C621	CE0161HM23	EC,1UF/50V,M;2
C622	CC0151HZ24	CC,0.1UF/50V,Z;2
C623	CC0151HZ24	CC,0.1UF/50V,Z;2
C624	CC0151HZ24	CC,0.1UF/50V,Z;2
C625	CC0151HZ24	CC,0.1UF/50V,Z;2
C626	CC0151HZ24	CC,0.1UF/50V,Z;2
C627	CC6801HK22	CC,68PF/50V,K;2
C701	CE1071CM25	EC,100UF/16V,M;2
C801	CE1071CM25	EC,100UF/16V,M;2
C802	CC4712HK24	CC,470PF/500V,K;2
C803	CC0143AZC6	CC,0.01UF/1KV,Z;C
C804	CC0142HZ25	CC,0.01UF/500V,Z;2
C805	CE2262AM21	EC,22UF/100V,M;2
C806	CC0142HZ25	CC,0.01UF/500V,Z;2
C807	CE1071CM25	EC,100UF/16V,M;2
C808	CC0151HZ24	CC,0.1UF/50V,Z;2
C810	CB2252AM26	BP,2.2UF/100V,M;2
C811	CE1062CM26	EC,10UF/160V,M;2
C812	CC0151HZ24	CC,0.1UF/50V,Z;2
C814	CB2252AM26	BP,2.2UF/100V,M;2
C815	CE1062CM26	EC,10UF/160V,M;2
C816	CC0151HZ24	CC,0.1UF/50V,Z;2
C818	CB2252AM26	BP,2.2UF/100V,M;2
C819	CE1062CM26	EC,10UF/160V,M;2
C823	CC0142HZ25	CC,0.01UF/500V,Z;2
C824	CC0142HZ25	CC,0.01UF/500V,Z;2
C825	CC0142HZ25	CC,0.01UF/500V,Z;2
C826	CC0142HZ25	CC,0.01UF/500V,Z;2
C827	CC0142HZ25	CC,0.01UF/500V,Z;2
C828	CC0142HZ25	CC,0.01UF/500V,Z;2
CABLE for POWER	KBD0NQ11B7	POWER CABLE VDE 6FT (P-EARL WHITE)
CABLE for VIDEO	KA7BH01073	6FT DB15-H11(DDC1/2B) UL2919 DH-1764U
CRT	XHF5021603	CRT 17".26mm 80K M41K-KL180X14(U)
CRT & FRONT FRAME	3L021N12N9	RUBBER WASHER φ7*φ20.5*2.5mmT
CRT & FRONT FRAME	4T006N10N6	WASHER ID#6.2 OD#20 t1.6mm
CRT & FRONT FRAME	4T525N08N7	SCREW TAP #5*25mm NI
CRT GND	ZG02315010	GT PIN 2.3#15mm 1.2 φ
CRT PCB	PDU1022012	CRT PCB DH-1764 REV:2.0
CRT PCB use	1T160N26NA	SHIELD CRT PCB SPTE t=0.3mm
CRT TO CRT SHIELD	KW40005131	WIRE 400mm BLACK UL10-15#18+5.3φ
CRT use	3L100Q11N0	CRT WARNING LABEL 27KV 75*60mm
CX201	SX80000C*6	CRYSTAL 8.000MHZ
D102	DB3SBA49Z2	DIODE BRIDGE D3SBA60 (SHINDENGEN)
D102(substitute)	DB406*69Z7	DIODE RBV-406
D103	DT52M*28Z1	DIODE BYT52M (TFK)
D103(substitute)	DIR10840Z8	DIODE HER108 1A/1000
D105	D3083*3114	DIODE 1SS83(1A/300V)(HITACHI)
D106	D3083*3114	DIODE 1SS83(1A/300V)(HITACHI)
D107	DN41487114	DIODE 1N4148 (ROHM) 52mm
D107(substitute)	DN41482819	DIODE 1N4148 (TFK)
D108	DZ16042607	DIODE(Z) 16V 1/2W (PHILIPS)
D108(substitute)	DZ16042807	DIODE(Z) 16V 1/2W
D110	DN41487114	DIODE 1N4148 (ROHM) 52mm
D110(substitute)	DN41482819	DIODE 1N4148 (TFK)
D111	DT52M*28Z1	DIODE BYT52M (TFK)
D111(substitute)	DIR10840Z8	DIODE HER108 1A/1000

Position	Parts No.	Description
D112	1C046N48N2	HEAT SINK EXTRU 1.2t*27 *46mm DH1764
D112	D9540642Z2	DIODE FUF5406-600V (FAGOR)
D113	D*0DF245Z3	DIODE 30DF2-200V (IR)
D113(substitute)	D954024Z0	DIODE FUF5402-200V
D114	DKDQ0645Z1	DIODE 31DQ06 (IR)
D114(substitute)	DSRK4669Z3	DIODE RK 46 (SANKEN)
D115	D9400442Z1	DIODE FUF4004-400V (FAGOR)
D201	DZ51C42602	DIODE(Z) 5.1V 1/2W (PHILIPS)
D201(substitute)	DZ51C42802	DIODE(Z) 5.1V 1/2W
D202	DN41487114	DIODE 1N4148 (ROHM) 52mm
D202(substitute)	DN41482819	DIODE 1N4148 (TFK)
D203	2F018N08N1	LED HOUSING (3PIN) DH-1570 17.5mmH
D203	YC0G255010	LED G/Y 5φ 2.54mm L-59GYW
D204	DN41487114	DIODE 1N4148 (ROHM) 52mm
D204(substitute)	DN41482819	DIODE 1N4148 (TFK)
D301	DM33G*26Z1	DIODE BYD33G 400V (PHILIPS)
D301(substitute)	DIR10540Z9	DIODE HER105 1A/400V
D302	DN41487114	DIODE 1N4148 (ROHM) 52mm
D302(substitute)	DN41482819	DIODE 1N4148 (TFK)
D401	DR1NS44914	DIODE D1NS4-4060 (SHIN-DENGEN)
D402	DKDQ0645Z1	DIODE 31DQ06 (IR)
D402(substitute)	DSRK4669Z3	DIODE RK 46 (SANKEN)
D403	DR1NS44914	DIODE D1NS4-4060 (SHIN-DENGEN)
D404	DR1NS44914	DIODE D1NS4-4060 (SHIN-DENGEN)
D405	DN41487114	DIODE 1N4148 (ROHM) 52mm
D405(substitute)	DN41482819	DIODE 1N4148 (TFK)
D406	DN41487114	DIODE 1N4148 (ROHM) 52mm
D406(substitute)	DN41482819	DIODE 1N4148 (TFK)
D407	DM33G*26Z1	DIODE BYD33G 400V (PHILIPS)
D407(substitute)	DIR10540Z9	DIODE HER105 1A/400V
D408	DM33G*26Z1	DIODE BYD33G 400V (PHILIPS)
D408(substitute)	DIR10540Z9	DIODE HER105 1A/400V
D409	DN41487114	DIODE 1N4148 (ROHM) 52mm
D409(substitute)	DN41482819	DIODE 1N4148 (TFK)
D410	DM33G*26Z1	DIODE BYD33G 400V (PHILIPS)
D410(substitute)	DIR10540Z9	DIODE HER105 1A/400V
D411	DM33G*26Z1	DIODE BYD33G 400V (PHILIPS)
D411(substitute)	DIR10540Z9	DIODE HER105 1A/400V
D412	DM33G*26Z1	DIODE BYD33G 400V (PHILIPS)
D412(substitute)	DIR10540Z9	DIODE HER105 1A/400V
D413	D9540442Z6	DIODE FUF5404-400V (FAGOR)
D414	DZ12042603	DIODE(Z) 12V 1/2W (PHILIPS)
D415	DN41487114	DIODE 1N4148 (ROHM) 52mm
D415(substitute)	DN41482819	DIODE 1N4148 (TFK)
D416	DN41487114	DIODE 1N4148 (ROHM) 52mm
D416(substitute)	DN41482819	DIODE 1N4148 (TFK)
D417	DN41487114	DIODE 1N4148 (ROHM) 52mm
D417(substitute)	DN41482819	DIODE 1N4148 (TFK)
D418	D3083*3114	DIODE 1SS83(1A/300V)(HI-TACHI)
D419	DN41487114	DIODE 1N4148 (ROHM) 52mm
D419(substitute)	DN41482819	DIODE 1N4148 (TFK)
D420	D3083*3114	DIODE 1SS83(1A/300V)(HI-TACHI)
D421	DT52M*28Z1	DIODE BYT52M (TFK)
D421(substitute)	DIR10840Z8	DIODE HER108 1A/1000
D422	DN41487114	DIODE 1N4148 (ROHM) 52mm
D422(substitute)	DN41482819	DIODE 1N4148 (TFK)
D423	DT52M*28Z1	DIODE BYT52M (TFK)
D423(substitute)	DIR10840Z8	DIODE HER108 1A/1000
D424	DT52M*28Z1	DIODE BYT52M (TFK)
D424(substitute)	DIR10840Z8	DIODE HER108 1A/1000
D425	D*32B*53Z4	DIODE DMV32B DH-1764
D425(Q403)	1A0K2N15NC	HEAT SINK (AL t=0.3mm)
D425(Q403)	4T308N14N3	SCREW ISO #3*8mm NI
D426	RA*152GJ48	RES,1.5KΩ,1/4W,J;4
D427	DN41487114	DIODE 1N4148 (ROHM) 52mm
D427(substitute)	DN41482819	DIODE 1N4148 (TFK)
D428	DT52M*28Z1	DIODE BYT52M (TFK)
D428(substitute)	DIR10840Z8	DIODE HER108 1A/1000
D429	DZ51C42602	DIODE(Z) 5.1V 1/2W (PHILIPS)
D429(substitute)	DZ51C42802	DIODE(Z) 5.1V 1/2W
D430	DZ51C42602	DIODE(Z) 5.1V 1/2W (PHILIPS)
D430(substitute)	DZ51C42802	DIODE(Z) 5.1V 1/2W
D601	DN41487114	DIODE 1N4148 (ROHM) 52mm
D601(substitute)	DN41482819	DIODE 1N4148 (TFK)
D602	DN41487114	DIODE 1N4148 (ROHM) 52mm
D602(substitute)	DN41482819	DIODE 1N4148 (TFK)
D603	DN41487114	DIODE 1N4148 (ROHM) 52mm
D603(substitute)	DN41482819	DIODE 1N4148 (TFK)
D701	DZ51C42602	DIODE(Z) 5.1V 1/2W (PHILIPS)
D701(substitute)	DZ51C42802	DIODE(Z) 5.1V 1/2W
D801	DN41487114	DIODE 1N4148 (ROHM) 52mm
D801(substitute)	DN41480211	DIODE 1N4148 (NS)
D801(substitute)	DN41482819	DIODE 1N4148 (TFK)
D801(substitute)	DN41483118	DIODE 1N4148
D803	DN41487114	DIODE 1N4148 (ROHM) 52mm
D803(substitute)	DN41480211	DIODE 1N4148 (NS)
D803(substitute)	DN41482819	DIODE 1N4148 (TFK)
D803(substitute)	DN41483118	DIODE 1N4148
D805	DN41487114	DIODE 1N4148 (ROHM) 52mm
D805(substitute)	DN41480211	DIODE 1N4148 (NS)
D805(substitute)	DN41482819	DIODE 1N4148 (TFK)
D805(substitute)	DN41483118	DIODE 1N4148
F101	FB25233216	FUSE 3.15A 250V 20mm (SEMKO)
F101 use	1T010N01N3	FUSE CLIP 7*7*12mmH
FBT use	4T312N09N3	SCREW TAP2 #3*12 W/H
FIX PCB & BRACKET	4T308N01N4	SCREW TAP #3*8mm NI W/H
GND 1	ZG02315010	GT PIN 2.3#15mm 1.2 φ
GND 3	ZG02315010	GT PIN 2.3#15mm 1.2 φ
GND 4	KW230061M6	WIRE 230mm BLACK UL10-15#22,K DH-1764
GND 5	KW180061N6	WIRE 180mm BLACK UL1015#22 K,K
GND 7	KW280061M1	WIRE 280mm BLACK UL10-15#22 K
GND.WIRE	4T306B01B2	SCREW TAP 3*6mm W/H NI
IC101	ILK3842895	IC UC3842AM(LINFINITY)
IC101(substitute)	IL03842872	IC IP3842N (SEMELAB)
IC102	IT7A221223	IC SN74LS221DR21 DH-1764U
IC102(substitute)	IT7A221312	IC 74LS221 (HITACHI)
IC201	IUM68P6396	IC UM68P60 (UMC)
IC201 use	BSI1402**7	IC SOCKET 40P (2.54mm)
IC202	IFT520C856	IC PST520C (MITSUMI)
IC202(substitute)	IFT572C852	IC PST572C (MITSUMI)
IC203	IS7C14*26D	IC 74HC14 DIP (PHILIPS)
IC204	IBTV0420E3	IC MTV004-2 DH-1764U
IC205	ISELC04829	IC 24LC04B/P (MICROCHIP)
IC205 use	BSI1082**3	IC SOCKET 8P (2.54mm)
IC205(substitute)	ISEC04*614	IC AT24C04-10PC (MOS
IC206	IXTV0020E3	IC MTV002 DH-1782
IC301	1A050N14L5	HEAT SINK EXTRU 50*21W *50mmH(BLACK)
IC301	4T306B01B2	SCREW TAP 3*6mm W/H NI
IC301	IFI8172536	IC TDA8172 (SGS)
IC301	NEDA817203	TDA8172 ASS'Y
IC301(substitute)	NEEA817200	TEA8172 ASS'Y
IC401	IDA9105538	IC TDA9105 DH-1764
IC402	1A013N11N4	HEAT SINK TO-220
IC402	4T306B01B2	SCREW TAP 3*6mm W/H NI
IC402	IR7812*222	IC MC7812CT (MOTOROLA)
IC402(substitute)	IR7812*311	IC 7812P (HITACHI)

Position	Parts No.	Description
IC402(substitute)	IR7812*800	IC HSMC7812 (HMC)
IC403	IF2358*01D	IC LM358(DIP) ALL MODEL
IC403(substitute)	IF2358N533	IC LM358N
IC404	ILK3842895	IC UC3842AM(LINFINITY)
IC404(substitute)	IL03842872	IC IP3842N (SEMELAB)
IC601	IA21281027	IC LM1281 (N/N.S)
IC701	IQEC211538	IC ST24LC211 DH-1764
IC701 use	BSI1082**3	IC SOCKET 8P (2.54mm)
IC701(substitute)	ISELC21823	IC 24LC21/P (MICROCH
J001	JW0600A3*8	JUMPER WIRE AUTO 0.6*25mm
J002	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J003	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J004	JW060033*6	JUMPER WIRE AUTO 0.6*7.5mm
J005	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J006	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J007	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J008	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J009	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J010	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J011	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J012	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J013	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J014	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J015	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J016	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J017	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J018	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J019	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J020	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J021	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J022	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J023	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J024	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J025	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J026	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J027	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J028	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J029	JW060033*6	JUMPER WIRE AUTO 0.6*7.5mm
J030	JW060033*6	JUMPER WIRE AUTO 0.6*7.5mm
J031	JW060033*6	JUMPER WIRE AUTO 0.6*7.5mm
J032	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J033	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J034	JW0600A3*8	JUMPER WIRE AUTO 0.6*25mm
J035	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J036	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J037	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J038	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J039	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J040	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J041	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J042	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J043	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J044	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J045	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J046	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J047	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J048	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J049	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J050	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J051	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J052	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J053	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J054	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J055	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J055	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J056	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J057	JW060033*6	JUMPER WIRE AUTO 0.6*7.5mm
J058	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J059	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J060	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J061	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J062	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J063	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm

Position	Parts No.	Description
J064	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J065	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J066	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J067	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J068	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J069	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J070	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J071	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J072	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J073	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J074	JW0600A3*8	JUMPER WIRE AUTO 0.6*25mm
J075	JW0600A3*8	JUMPER WIRE AUTO 0.6*25mm
J076	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J077	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J078	JW060083*6	JUMPER WIRE AUTO 0.6*20mm
J079	JW060083*6	JUMPER WIRE AUTO 0.6*20mm
J080	JW060083*6	JUMPER WIRE AUTO 0.6*20mm
J081	JW060083*6	JUMPER WIRE AUTO 0.6*20mm
J082	JW060083*6	JUMPER WIRE AUTO 0.6*20mm
J083	JW060083*6	JUMPER WIRE AUTO 0.6*20mm
J084	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J085	JW060083*6	JUMPER WIRE AUTO 0.6*20mm
J086	JW060083*6	JUMPER WIRE AUTO 0.6*20mm
J087	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J088	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J089	JW060083*6	JUMPER WIRE AUTO 0.6*20mm
J090	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J091	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J092	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J093	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J094	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J095	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J096	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J097	JW060083*6	JUMPER WIRE AUTO 0.6*20mm
J098	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J099	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J100	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J101	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J102	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J103	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J104	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J105	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J106	RA*150GJ42	RES,15Ω,1/4W,J;4
J107	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J108	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J109	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J110	JW060033*6	JUMPER WIRE AUTO 0.6*7.5mm
J111	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J112	JW060033*6	JUMPER WIRE AUTO 0.6*7.5mm
J113	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J114	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J115	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J116	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J117	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J118	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J119	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J120	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J121	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J122	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J123	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J124	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J125	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J126	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J127	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J128	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J129	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J130	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J131	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J132	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J133	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J134	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J135	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J136	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm

Position	Parts No.	Description
J137	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J138	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J139	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J140	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J141	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J142	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J143	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J144	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J145	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J146	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J147	JW060033*6	JUMPER WIRE AUTO 0.6*7.5mm
J148	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J149	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J150	JW060023*2	JUMPER WIRE AUTO 0.6*5mm
J151	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J153	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J154	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J155	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J156	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J157	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J158	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J159	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J160	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J161	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J162	JW060033*6	JUMPER WIRE AUTO 0.6*7.5mm
J163	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J164	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J165	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J166	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J167	JW060033*6	JUMPER WIRE AUTO 0.6*7.5mm
J168	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J169	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J170	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J171	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J172	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J173	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J174	JW060033*6	JUMPER WIRE AUTO 0.6*7.5mm
J175	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J176	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J177	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J178	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J179	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J180	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J181	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J182	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J183	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J184	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J185	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J186	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J187	JW060033*6	JUMPER WIRE AUTO 0.6*7.5mm
J188	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J189	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J190	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J191	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J192	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J193	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J195	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J196	JW060023*2	JUMPER WIRE AUTO 0.6*5mm
J197	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J198	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J199	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J200	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J201	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J202	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J203	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J204	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J205	JW060033*6	JUMPER WIRE AUTO 0.6*7.5mm
J206	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J207	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J208	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J209	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J210	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J211	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J212	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J213	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J214	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J215	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J216	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J217	JW060083*6	JUMPER WIRE AUTO 0.6*20mm
J218	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J219	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J220	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J221	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J222	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J223	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J224	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J225	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J226	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J227	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J228	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J230	JW060083*6	JUMPER WIRE AUTO 0.6*20mm
J231	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J232	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J233	JW060073*2	JUMPER WIRE AUTO 0.6*17.5mm
J234	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J235	RA*471GJ42	RES,470Ω,1/4W,J;4
J236	JW060033*6	JUMPER WIRE AUTO 0.6*7.5mm
J237	RA*471GJ42	RES,470Ω,1/4W,J;4
J238	RA*471GJ42	RES,470Ω,1/4W,J;4
J239	JW060033*6	JUMPER WIRE AUTO 0.6*7.5mm
J240	JW0600A3*8	JUMPER WIRE AUTO 0.6*25mm
J241	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J242	JW060023*2	JUMPER WIRE AUTO 0.6*5mm
J242	JW060033*6	JUMPER WIRE AUTO 0.6*7.5mm
J243	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J244	JW060033*6	JUMPER WIRE AUTO 0.6*7.5mm
J245	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J246	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J247	JW060033*6	JUMPER WIRE AUTO 0.6*7.5mm
J248	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J249	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J250	JW060033*6	JUMPER WIRE AUTO 0.6*7.5mm
J251	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J252	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J253	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J254	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J801	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J802	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J803	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J804	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
J805	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J806	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J807	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J808	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J809	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J810	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J811	JW060053*4	JUMPER WIRE AUTO 0.6*12.5mm
J812	JW060043*0	JUMPER WIRE AUTO 0.6*10mm
J813	JW0600A3*8	JUMPER WIRE AUTO 0.6*25mm
K402	LN*091C*09	CANCEL COIL 9.1UH
L102	LFL0170*19	LINE FILTER ET28 17mH DL-1750MU
L103	LAL012C*27	AC FILTER 1.0mH CT-1469 FCC
L104	LGC1764*39	DEGAUSSING COIL 0.45φ/75Ts DL-1750M
L105	LC12035C30	BEAD CORE 3.5*9mm
L106	LC12035C30	BEAD CORE 3.5*9mm
L107	LC12035C52	BEAD CORE 3.5*4.5
L108	LC12035C30	BEAD CORE 3.5*9mm
L109	LC12035C30	BEAD CORE 3.5*9mm
L110	LC12035C30	BEAD CORE 3.5*9mm

Position	Parts No.	Description
L201	LC12035C30	BEAD CORE 3.5*9mm
L401	LRC145*702	ROTATION COIL 80Ω/0.2φ 300 TS DH-1764
L402	LLL017C*17	LINEAR COIL DH-1764 3.5 uH/-3A
L403	LLL049C*19	LINEAR COIL 4.9uH DH-1764
L404	LKL0043*15	CHOKE COIL 4.0mH DH-1570
L405	LKL0111*10	CHOKE 110uH DH-1764
L407	LKL0100*13	CHOKE COIL 10uH 19.5Ts DM-15"/RM-14"
L408	LC12035C30	BEAD CORE 3.5*9mm
L409	LP00102*36	PEAKING COIL 1000uH
L601	ZEG*470007	EMI FILTER ZJSR5101-470-TA
L602	ZEG*470007	EMI FILTER ZJSR5101-470-TA
L603	ZEG*470007	EMI FILTER ZJSR5101-470-TA
L604	LC12035C52	BEAD CORE 3.5*4.5
L605	LC12035C52	BEAD CORE 3.5*4.5
L801	LC12035C52	BEAD CORE 3.5*4.5
L802	LKL2313*14	CHOKE up 23Ts/down 13Ts
L803	LKL2313*14	CHOKE up 23Ts/down 13Ts
L804	LKL2313*14	CHOKE up 23Ts/down 13Ts
L807	LC12035C52	BEAD CORE 3.5*4.5
MAIN PCB	PDT1011119	MAIN PCB REV:1.1 DH-1764U
MAIN PCB use	2F009N33N9	PCB SPACER SUPPORTS
Q101	1A050N14M1	HEAT SINK EXTRU 50*21W *60mmH(BLACK)
Q101	4T308N01N4	SCREW TAP #3*8mm NI W/H
Q101	SMF7TM*298	MOSFET FS7TM-12 (MITSUBISHI)
Q101(substitute)	SMF7KM*290	MOSFET FS7KM-12
Q102	SSA1006*10	SCR MCR100-6 400V TAPING
Q102(substitute)	SSA1006**4	SCR MCR100-6 400V NO
Q103	Q114ES*711	Tr DTC114ES (ROHM)
Q103(substitute)	QC3402*231	Tr 2SC3402 (SANYO)
Q104	SSA1006*10	SCR MCR100-6 400V TAPING
Q104(substitute)	SSA1006**4	SCR MCR100-6 400V NO
Q201	QC1384*529	Tr 2SC1384 (MATSUSHITA)
Q204	QK945C1654	Tr KSC945CG(SAMSUNG)
Q204(substitute)	QC945P1994	Tr KTC945-P (KEC)
Q205	QK945C1654	Tr KSC945CG(SAMSUNG)
Q205(substitute)	QC945P1994	Tr KTC945-P (KEC)
Q206	QB772P*0F1	Tr 2SB772P
Q206(substitute)	QB1009*718	Tr 2SB1009R
Q207	QK945C1654	Tr KSC945CG(SAMSUNG)
Q207(substitute)	QC945P1994	Tr KTC945-P (KEC)
Q208	QB772P*0F1	Tr 2SB772P
Q208(substitute)	QB1009*718	Tr 2SB1009R
Q402	SMK941*320	MOSFET 2SK941 (TOSHIBA)
Q403	QC5048*324	Tr 2SC5048 (TOSHIBA)
Q403 HEATSINK	4T306B01B2	SCREW TAP 3*6mm W/H NI
Q403 HEATSINK use	KQ0700**I9	BRAID WIRE 70mm+4.3φ
Q403(D425)	1A064A14N7	HEAT SINK AL 26*64*40mm(H)
Q403(D425)	4T308N01N4	SCREW TAP #3*8mm NI W/H
Q404	QN39041221	Tr NPN 2N3904 TAPING
Q404(substitute)	QN39041021	Tr 2N3904 (NS)
Q405	QA673*1312	Tr 2SA673 (HITACHI)
Q405(substitute)	QA200Y1998	Tr KTA200-Y (KEC)
Q406	QA673*1312	Tr 2SA673 (HITACHI)
Q406(substitute)	QA200Y1998	Tr KTA200-Y (KEC)
Q407	1A050N14L5	HEAT SINK EXTRU 50*21W *50mmH(BLACK)
Q407	4T308N01N4	SCREW TAP #3*8mm NI W/H
Q407	Q1406Y*326	Tr 2SD1406-Y
Q407(substitute)	NED2107W01	2SD2107W-C ASS'Y
Q408	QK945C1654	Tr KSC945CG(SAMSUNG)
Q408(substitute)	QC945P1994	Tr KTC945-P (KEC)
Q410	QK945C1654	Tr KSC945CG(SAMSUNG)
Q410(substitute)	QC945P1994	Tr KTC945-P (KEC)
Q412	QD882P*0F5	Tr NPN (2SD882P) NO TAPING
Q412(substitute)	QC1162*311	Tr 2SC1162C(HITACHI)
Q413	QB772P*0F1	Tr 2SB772P
Q413(substitute)	QB1009*718	Tr 2SB1009R
Q415	QW145*1809	Tr HTL145 (Hi-Sincerity)
Q416	QK945C1654	Tr KSC945CG(SAMSUNG)
Q416(substitute)	QC945P1994	Tr KTC945-P (KEC)
Q417	QC1959*324	Tr 2SC1959 (TOSHIBA)
Q417(substitute)	QC1213C317	Tr 2SC1213A(HITACHI)
Q418	1A023B14N4	HEAT SINK EXTRU (BLACK) 23*15.5*35mmH
Q418	4T308N01N4	SCREW TAP #3*8mm NI W/H
Q418	SMIS630651	MOSFET IRFS630 (SAMSUNG)
Q419	CE1061HM23	EC,10UF/50V,M;2
Q420	QM733*1650	Tr PNP KSA733C-GTA TAPING
Q420(substitute)	QA733P1995	TRANSISTOR KTA733-P
Q421	Q114ES*711	Tr DTC114ES (ROHM)
Q421(substitute)	QC3402*231	Tr 2SC3402 (SANYO)
Q422	QF423*1809	Tr HBF423 (Hi-Sincerity)
Q422(substitute)	QF423*1326	Tr BF423 (TE2,M) (TO
Q424	QC1959*324	Tr 2SC1959 (TOSHIBA)
Q424(substitute)	QC1213C317	Tr 2SC1213A(HITACHI)
Q425	1A013N11N4	HEAT SINK TO-220
Q425	4T308N01N4	SCREW TAP #3*8mm NI W/H
Q425	SMF10UM298	MOSFET FS10UM-5 (MITSUBISHI)
Q426	SMF10UM298	MOSFET FS10UM-5 (MITSUBISHI)
Q426(substitute)	SMI630*653	MOSFET IRF630
Q427	QM733*1650	Tr PNP KSA733C-GTA TAPING
Q427(substitute)	QA733P1995	TRANSISTOR KTA733-P
Q428	QC1959*324	Tr 2SC1959 (TOSHIBA)
Q428(substitute)	QC1213C317	Tr 2SC1213A(HITACHI)
Q429	QA673*1312	Tr 2SA673 (HITACHI)
Q429(substitute)	QA200Y1998	Tr KTA200-Y (KEC)
Q430	Q114ES*711	Tr DTC114ES (ROHM)
Q430(substitute)	QC3402*231	Tr 2SC3402 (SANYO)
Q431	QN39041221	Tr NPN 2N3904 TAPING
Q431(substitute)	QN39041021	Tr 2N3904 (NS)
Q432	QW145*1809	Tr HTL145 (Hi-Sincerity)
Q601	QM733*1650	Tr PNP KSA733C-GTA TAPING
Q601(substitute)	QA733P1995	TRANSISTOR KTA733-P
Q602	QK945C1654	Tr KSC945CG(SAMSUNG)
Q602(substitute)	QC945P1994	Tr KTC945-P (KEC)
Q603	Q114ES*711	Tr DTC114ES (ROHM)
Q603(substitute)	QC3402*231	Tr 2SC3402 (SANYO)
Q604	QP23691801	Tr HPH2369 (Hi-Sincerity)
Q605	QP23691801	Tr HPH2369 (Hi-Sincerity)
Q606	QP23691801	Tr HPH2369 (Hi-Sincerity)
Q801	1A023B14N4	HEAT SINK EXTRU (BLACK) 23*15.5*35mmH
Q801	4T308N01N4	SCREW TAP #3*8mm NI W/H
Q801	QK3953*659	Tr KSC3953-D (SAMSUNG)
Q803	QM916*1656	Tr KSA916-YTA TAPING
Q803(substitute)	QB647A1311	Tr 2SB647A (HITACHI)
Q804	1A023B14N4	HEAT SINK EXTRU (BLACK) 23*15.5*35mmH
Q804	4T308N01N4	SCREW TAP #3*8mm NI W/H
Q804	QK3953*659	Tr KSC3953-D (SAMSUNG)
Q806	QM916*1656	Tr KSA916-YTA TAPING
Q806(substitute)	QB647A1311	Tr 2SB647A (HITACHI)
Q807	1A023B14N4	HEAT SINK EXTRU (BLACK) 23*15.5*35mmH
Q807	4T308N01N4	SCREW TAP #3*8mm NI W/H
Q807	QK3953*659	Tr KSC3953-D (SAMSUNG)
Q809	QM916*1656	Tr KSA916-YTA TAPING
Q809(substitute)	QB647A1311	Tr 2SB647A (HITACHI)
Q810	QC27051325	Tr 2SC2705 (TOSHIBA)
Q810(substitute)	QC19211312	Tr 2SC1921 (HITACHI)

Position	Parts No.	Description
R,G,B OUT TO W602	KEB6AA1053	6P 255mm R/BL/CRAY UL1-365#26 + CORE
R103	RA:474IJ49	RES,470KΩ,1/2W,J;4
R104	RG*140SNZ6	PTC 14Ω ± 20% (2 pin)
R105	RH*50C**16	NTC SCK-055 5Ω
R106	RA:105IJ45	RES,1MΩ,1/2W,J;4
R107	RA*103GJ41	RES,10KΩ,1/4W,J;4
R108	RC*1542JS6	RES(M),150KΩ,2W,J;S
R109	RC*2233JU4	RES(M),22KΩ,3W,J;U
R110	RA*10CGJ41	RES,1Ω,1/4W,J;4
R111	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R112	RA*103GJ41	RES,10KΩ,1/4W,J;4
R113	RA*223GJ46	RES,22KΩ,1/4W,J;4
R114	RA*224EJ29	RES,220KΩ,1/6W,J;2
R115	RA*392GJ48	RES,3.9KΩ,1/4W,J;4
R116	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R117	RA*223GJ46	RES,22KΩ,1/4W,J;4
R118	RA*471GJ42	RES,470Ω,1/4W,J;4
R119	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R120	RA*330GJ40	RES,33Ω,1/4W,J;4
R121	RA*102GJ48	RES,1KΩ,1/4W,J;4
R122	RM*18R2JU6	RES,0.18Ω,2W,J;U
R123	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R124	RA*333GJ49	RES,33KΩ,1/4W,J;4
R125	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R126	RA:475IJ42	RES,4.7MΩ,1/2W,J;4
R127	RC*5102JS0	RES(M),51Ω,2W,J;S
R128	RC*5102JS0	RES(M),51Ω,2W,J;S
R129	RA*273GJ46	RES,27KΩ,1/4W,J;4
R131	RA*103GJ41	RES,10KΩ,1/4W,J;4
R201	RA*102GJ48	RES,1KΩ,1/4W,J;4
R203	RA*331GJ43	RES,330Ω,1/4W,J;4
R204	RA*331GJ43	RES,330Ω,1/4W,J;4
R205	RA*221GJ40	RES,220Ω,1/4W,J;4
R206	RA*102GJ48	RES,1KΩ,1/4W,J;4
R207	RA*102GJ48	RES,1KΩ,1/4W,J;4
R208	RA*101GJ45	RES,100Ω,1/4W,J;4
R209	RA*474GJ41	RES,470KΩ,1/4W,J;4
R210	RA*562GJ44	RES,5.6KΩ,1/4W,J;4
R211	RA*392GJ48	RES,3.9KΩ,1/4W,J;4
R212	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R213	RA*100GJ42	RES,10Ω,1/4W,J;4
R214	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R215	RA*473GJ48	RES,47KΩ,1/4W,J;4
R216	RA*473GJ48	RES,47KΩ,1/4W,J;4
R217	RA*473GJ48	RES,47KΩ,1/4W,J;4
R218	RA*473GJ48	RES,47KΩ,1/4W,J;4
R219	RA*473GJ48	RES,47KΩ,1/4W,J;4
R220	RA*473GJ48	RES,47KΩ,1/4W,J;4
R221	RA*473GJ48	RES,47KΩ,1/4W,J;4
R228	RA*105EJ27	RES,1MΩ,1/6W,J;2
R229	RA*471GJ42	RES,470Ω,1/4W,J;4
R230	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R231	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R232	RA*332GJ46	RES,3.3KΩ,1/4W,J;4
R233	RA*103GJ41	RES,10KΩ,1/4W,J;4
R234	RA*103GJ41	RES,10KΩ,1/4W,J;4
R235	RA*103GJ41	RES,10KΩ,1/4W,J;4
R236	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R237	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R238	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R239	RA*103GJ41	RES,10KΩ,1/4W,J;4
R240	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R242	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R243	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R244	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R245	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R246	RA*223GJ46	RES,22KΩ,1/4W,J;4
R247	RA*223GJ46	RES,22KΩ,1/4W,J;4
R248	RA*223GJ46	RES,22KΩ,1/4W,J;4
R249	RA*223GJ46	RES,22KΩ,1/4W,J;4
R250	RA*223GJ46	RES,22KΩ,1/4W,J;4
R251	RA*102GJ48	RES,1KΩ,1/4W,J;4
R252	RA*102GJ48	RES,1KΩ,1/4W,J;4
R253	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R254	RA*103GJ41	RES,10KΩ,1/4W,J;4
R255	RA:102IJ46	RES,1KΩ,1/2W,J;4
R256	RA*103GJ41	RES,10KΩ,1/4W,J;4
R257	RA*471GJ42	RES,470Ω,1/4W,J;4
R258	RA*103GJ41	RES,10KΩ,1/4W,J;4
R259	RA*331GJ43	RES,330Ω,1/4W,J;4
R260	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R261	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R262	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R263	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R264	RA*103GJ41	RES,10KΩ,1/4W,J;4
R265	RA*103GJ41	RES,10KΩ,1/4W,J;4
R266	RA*103GJ41	RES,10KΩ,1/4W,J;4
R267	RA*103GJ41	RES,10KΩ,1/4W,J;4
R268	RA*103GJ41	RES,10KΩ,1/4W,J;4
R269	RA*103GJ41	RES,10KΩ,1/4W,J;4
R270	RA*393GJ41	RES,39KΩ,1/4W,J;4
R271	RA*103GJ41	RES,10KΩ,1/4W,J;4
R272	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R273	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R274	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R275	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R276	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R277	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R278	RA*393GJ41	RES,39KΩ,1/4W,J;4
R279	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R280	RA*333GJ49	RES,33KΩ,1/4W,J;4
R283	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R284	RA*223GJ46	RES,22KΩ,1/4W,J;4
R285	RA*103GJ41	RES,10KΩ,1/4W,J;4
R301	RC*47C2JS0	RES(M),4.7Ω,2W,J;S
R302	RA*753GJ47	RES,75KΩ,1/4W,J;4
R303	RA*203EJ22	RES,20KΩ,1/6W,J;2
R304	RA*562GJ44	RES,5.6KΩ,1/4W,J;4
R305	RA*105GJ47	RES,1MΩ,1/4W,J;4
R306	RA*152GJ48	RES,1.5KΩ,1/4W,J;4
R307	RC*47C2JS0	RES(M),4.7Ω,2W,J;S
R308	RA:10CIJ49	RES,1Ω,1/2W,J;4
R309	RC*50R1JS8	RES(M),0.5Ω,1W,J;S
R310	RA:221IJ48	RES,220Ω,1/2W,J;4
R312	RA*103GJ41	RES,10KΩ,1/4W,J;4
R313	RA*103GJ41	RES,10KΩ,1/4W,J;4
R401	RA*10CGJ41	RES,1Ω,1/4W,J;4
R402	RA*101GJ45	RES,100Ω,1/4W,J;4
R403	RA*221GJ40	RES,220Ω,1/4W,J;4
R404	RA*103GJ41	RES,10KΩ,1/4W,J;4
R405	RA*331GJ43	RES,330Ω,1/4W,J;4
R406	RC*1002JS4	RES(M),10Ω,2W,J;S
R407	RC*1002JS4	RES(M),10Ω,2W,J;S
R408	RC*33R2JS6	RES(M),0.33Ω,2W,J;S
R409	RA*220GJ47	RES,22Ω,1/4W,J;4
R410	RC*47C2JS0	RES(M),4.7Ω,2W,J;S
R411	RA*103GJ41	RES,10KΩ,1/4W,J;4
R412	RA*473GJ48	RES,47KΩ,1/4W,J;4
R413	RA*392GJ48	RES,3.9KΩ,1/4W,J;4
R414	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R415	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R416	RA*152GJ48	RES,1.5KΩ,1/4W,J;4
R417	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R418	RA*393GJ41	RES,39KΩ,1/4W,J;4
R419	RA*682GJ49	RES,6.8KΩ,1/4W,J;4
R420	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R421	RA*561GJ41	RES,560Ω,1/4W,J;4

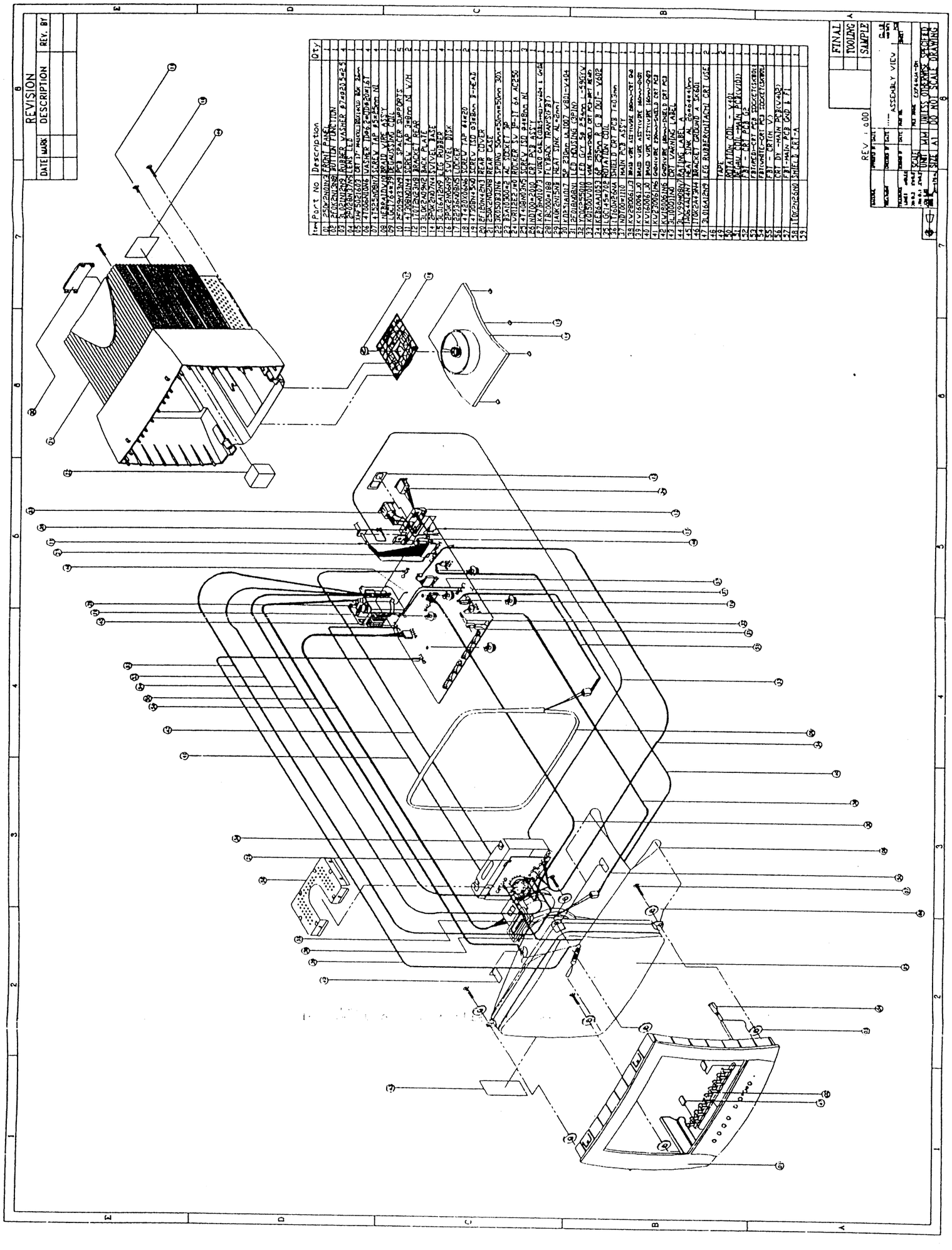
Position	Parts No.	Description
R422	RA*102EJ28	RES,1KΩ,1/6W,J;2
R423	RA*102GJ48	RES,1KΩ,1/4W,J;4
R424	RA*333GJ49	RES,33KΩ,1/4W,J;4
R425	RA*223GJ46	RES,22KΩ,1/4W,J;4
R426	RA*153GJ41	RES,15KΩ,1/4W,J;4
R427	RA*683GJ42	RES,68KΩ,1/4W,J;4
R428	RA*393GJ41	RES,39KΩ,1/4W,J;4
R429	RA*393GJ41	RES,39KΩ,1/4W,J;4
R430	RA*393GJ41	RES,39KΩ,1/4W,J;4
R431	RA*393GJ41	RES,39KΩ,1/4W,J;4
R432	RA*393GJ41	RES,39KΩ,1/4W,J;4
R433	RA*393GJ41	RES,39KΩ,1/4W,J;4
R434	RA*561GJ41	RES,560Ω,1/4W,J;4
R435	RA*333GJ49	RES,33KΩ,1/4W,J;4
R436	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R437	RA*103GJ41	RES,10KΩ,1/4W,J;4
R439	RA*332EJ26	RES,3.3KΩ,1/6W,J;2
R440	RA*102GJ48	RES,1KΩ,1/4W,J;4
R441	RA*100GJ42	RES,10Ω,1/4W,J;4
R442	RA*154GJ44	RES,150KΩ,1/4W,J;4
R443	RA*124GJ48	RES,120KΩ,1/4W,J;4
R444	RA*222EJ23	RES,2.2KΩ,1/6W,J;2
R445	RA*104EJ24	RES,100KΩ,1/6W,J;2
R446	RA*123GJ45	RES,12KΩ,1/4W,J;4
R447	RA*683GJ42	RES,68KΩ,1/4W,J;4
R448	RA*103GJ41	RES,10KΩ,1/4W,J;4
R449	RA*101EJ25	RES,100Ω,1/6W,J;2
R450	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R451	RA*103GJ41	RES,10KΩ,1/4W,J;4
R452	RA*103GJ41	RES,10KΩ,1/4W,J;4
R453	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R454	RA*102GJ48	RES,1KΩ,1/4W,J;4
R455	RA*682GJ49	RES,6.8KΩ,1/4W,J;4
R456	RA*104GJ44	RES,100KΩ,1/4W,J;4
R457	RA*102GJ48	RES,1KΩ,1/4W,J;4
R458	RA*682GJ49	RES,6.8KΩ,1/4W,J;4
R459	RA*104GJ44	RES,100KΩ,1/4W,J;4
R460	RA*471GJ42	RES,470Ω,1/4W,J;4
R461	RA*561GJ41	RES,560Ω,1/4W,J;4
R462	RA:33CIJ47	RES,3.3Ω,1/2W,J;4
R463	RA*102GJ48	RES,1KΩ,1/4W,J;4
R464	RA*220GJ47	RES,22Ω,1/4W,J;4
R465	RA:471IJ40	RES,470Ω,1/2W,J;4
R466	RC*1832JS9	RES(M),18KΩ,2W,J;S
R467	RA:221IJ48	RES,220Ω,1/2W,J;4
R468	RA:221IJ48	RES,220Ω,1/2W,J;4
R469	RC*2202JS9	RES(M),22Ω,2W,J;S
R470	RA*220GJ47	RES,22Ω,1/4W,J;4
R471	RA*102GJ48	RES,1KΩ,1/4W,J;4
R472	RA*100GJ42	RES,10Ω,1/4W,J;4
R474	RA*333GJ49	RES,33KΩ,1/4W,J;4
R475	RA*154EJ24	RES,150KΩ,1/6W,J;2
R476	RA*152GJ48	RES,1.5KΩ,1/4W,J;4
R477	RA*123GJ45	RES,12KΩ,1/4W,J;4
R478	RC*1542JS6	RES(M),150KΩ,2W,J;S
R479	RA*330GJ40	RES,33Ω,1/4W,J;4
R480	RC*2202JS9	RES(M),22Ω,2W,J;S
R481	RA*223GJ46	RES,22KΩ,1/4W,J;4
R482	RC*1231JS3	RES(M),12KΩ,1W,J;S
R483	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R484	RA*333GJ49	RES,33KΩ,1/4W,J;4
R485	RA*102GJ48	RES,1KΩ,1/4W,J;4
R486	RA*102GJ48	RES,1KΩ,1/4W,J;4
R487	RA*224EJ29	RES,220KΩ,1/6W,J;2
R488	RA*470GJ49	RES,47Ω,1/4W,J;4
R489	RC*22R1JS9	RES(M),0.22Ω,1W,J;S
R491	RA*392GJ48	RES,3.9KΩ,1/4W,J;4
R492	RA*223EJ26	RES,22KΩ,1/6W,J;2
R493	RA*152GJ48	RES,1.5KΩ,1/4W,J;4
R494	RA*332GJ46	RES,3.3KΩ,1/4W,J;4
R495	RA*102EJ28	RES,1KΩ,1/6W,J;2
R496	RA*104GJ44	RES,100KΩ,1/4W,J;4
R498	DN41482819	DIODE 1N4148 (TFK)
R499	CE2252EM25	EC,2.2UF/250V,M;2
R500	RA*10CGJ41	RES,1Ω,1/4W,J;4
R501	RA*102GJ48	RES,1KΩ,1/4W,J;4
R502	RA*750GJ48	RES,75Ω,1/4W,J;4
R503	RA*105GJ47	RES,1MΩ,1/4W,J;4
R504	RA:224IJ47	RES,220KΩ,1/2W,J;4
R505	RA*103GJ41	RES,10KΩ,1/4W,J;4
R506	RA*682GJ49	RES,6.8KΩ,1/4W,J;4
R507	RA*102GJ48	RES,1KΩ,1/4W,J;4
R508	RA*124GJ48	RES,120KΩ,1/4W,J;4
R509	RA*473GJ48	RES,47KΩ,1/4W,J;4
R510	RA*224GJ49	RES,220KΩ,1/4W,J;4
R511	RA*472EJ25	RES,4.7KΩ,1/6W,J;2
R514	RA*102GJ48	RES,1KΩ,1/4W,J;4
R515	RA*123GJ45	RES,12KΩ,1/4W,J;4
R516	RA*332GJ46	RES,3.3KΩ,1/4W,J;4
R518	RA*153EJ21	RES,15KΩ,1/6W,J;2
R519	RA*334GJ42	RES,330KΩ,1/4W,J;4
R520	RA*473GJ48	RES,47KΩ,1/4W,J;4
R521	RA*473GJ48	RES,47KΩ,1/4W,J;4
R522	RA*103GJ41	RES,10KΩ,1/4W,J;4
R523	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R525	RA:682IJ47	RES,6.8KΩ,1/2W,J;4
R527	RA*683GJ42	RES,68KΩ,1/4W,J;4
R528	JW060063*8	JUMPER WIRE AUTO 0.6*15mm
R529	RA*473GJ48	RES,47KΩ,1/4W,J;4
R530	RA*473EJ28	RES,47KΩ,1/6W,J;2
R531	RC4531EF21	RES,4.53KΩ,1/6W,F;2
R532	RA*183EJ27	RES,18KΩ,1/6W,J;2
R533	RA*473GJ48	RES,47KΩ,1/4W,J;4
R534	RA*473GJ48	RES,47KΩ,1/4W,J;4
R535	RA*683GJ42	RES,68KΩ,1/4W,J;4
R537	RA*103GJ41	RES,10KΩ,1/4W,J;4
R538	RC*2202JS9	RES(M),22Ω,2W,J;S
R539	RC*2202JS9	RES(M),22Ω,2W,J;S
R540	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R541	RA*102GJ48	RES,1KΩ,1/4W,J;4
R544	RA:682IJ47	RES,6.8KΩ,1/2W,J;4
R545	RA:682IJ47	RES,6.8KΩ,1/2W,J;4
R546	RA*221GJ40	RES,220Ω,1/4W,J;4
R601	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R602	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R603	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R604	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R605	RA*471GJ42	RES,470Ω,1/4W,J;4
R606	RA*471GJ42	RES,470Ω,1/4W,J;4
R607	RA*471GJ42	RES,470Ω,1/4W,J;4
R608	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R609	RA*101EJ25	RES,100Ω,1/6W,J;2
R610	RA*330GJ40	RES,33Ω,1/4W,J;4
R611	RA*330GJ40	RES,33Ω,1/4W,J;4
R612	RA*330GJ40	RES,33Ω,1/4W,J;4
R613	RA*333GJ49	RES,33KΩ,1/4W,J;4
R614	RA*104GJ44	RES,100KΩ,1/4W,J;4
R615	RA*100GJ42	RES,10Ω,1/4W,J;4
R616	RA*124GJ48	RES,120KΩ,1/4W,J;4
R617	RA*223GJ46	RES,22KΩ,1/4W,J;4
R618	RA*222EJ23	RES,2.2KΩ,1/6W,J;2
R620	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R621	RA*472GJ45	RES,4.7KΩ,1/4W,J;4
R622	RA*750GJ48	RES,75Ω,1/4W,J;4
R623	RA*101EJ25	RES,100Ω,1/6W,J;2
R624	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R625	RA*750GJ48	RES,75Ω,1/4W,J;4
R626	RA*101EJ25	RES,100Ω,1/6W,J;2

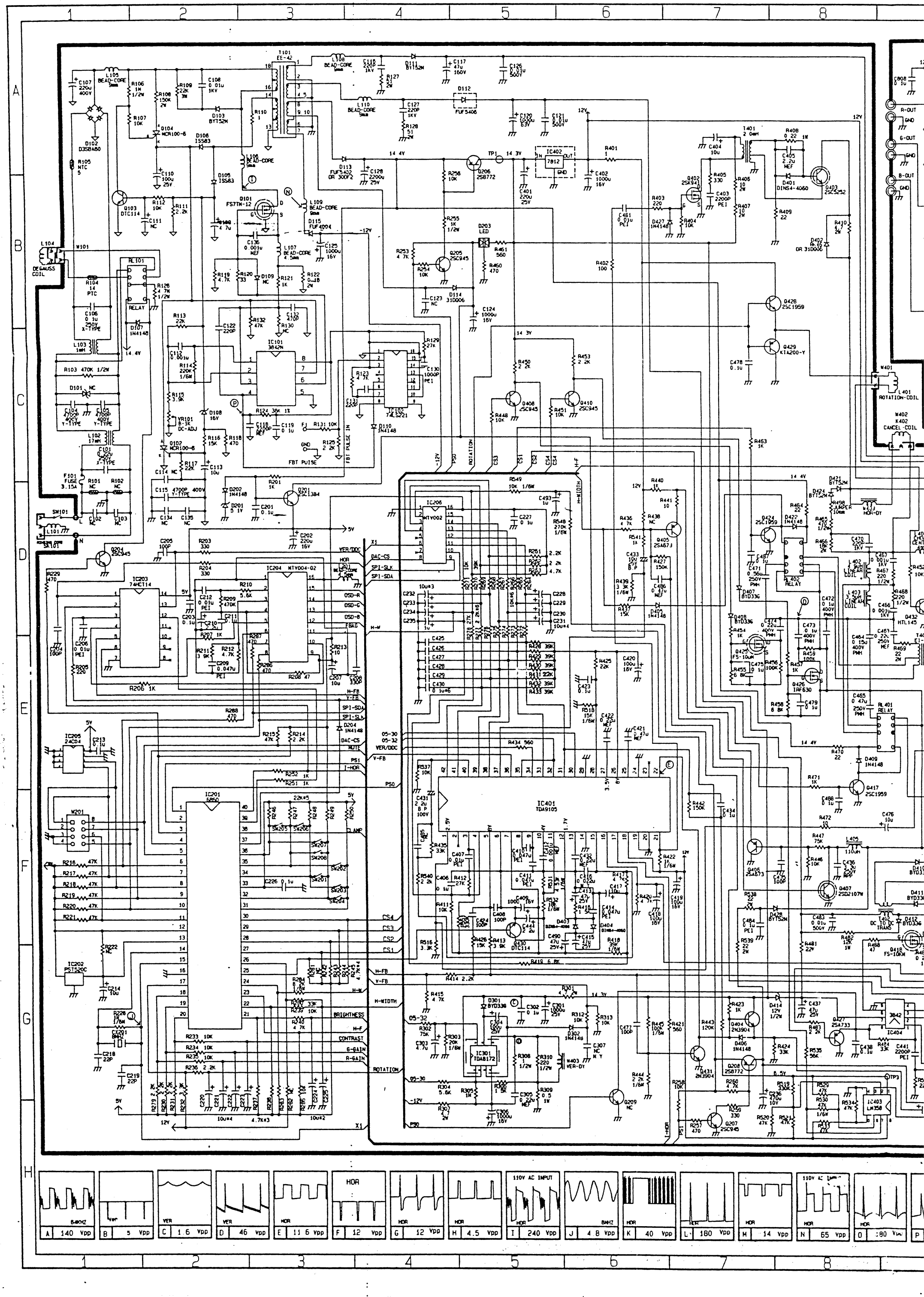
Position	Parts No.	Description
R627	RA*100GJ42	RES,10Ω,1/4W,J;4
R628	RA*100GJ42	RES,10Ω,1/4W,J;4
R629	RA*220EJ27	RES,22Ω,1/6W,J;2
R630	RA*391EJ25	RES,390Ω,1/6W,J;2
R631	RA*220EJ27	RES,22Ω,1/6W,J;2
R632	RA*391EJ25	RES,390Ω,1/6W,J;2
R633	RA*391EJ25	RES,390Ω,1/6W,J;2
R634	RA*220EJ27	RES,22Ω,1/6W,J;2
R635	RA*682GJ49	RES,6.8KΩ,1/4W,J;4
R636	RA*563GJ47	RES,56KΩ,1/4W,J;4
R637	RA*334GJ42	RES,330KΩ,1/4W,J;4
R638	RA*104GJ44	RES,100KΩ,1/4W,J;4
R639	RA*154GJ44	RES,150KΩ,1/4W,J;4
R640	RA*154GJ44	RES,150KΩ,1/4W,J;4
R641	RA*124GJ48	RES,120KΩ,1/4W,J;4
R642	RA*124GJ48	RES,120KΩ,1/4W,J;4
R643	RA*334GJ42	RES,330KΩ,1/4W,J;4
R644	RA*334GJ42	RES,330KΩ,1/4W,J;4
R645	RA*750GJ48	RES,75Ω,1/4W,J;4
R646	RA*750GJ48	RES,75Ω,1/4W,J;4
R647	RA*750GJ48	RES,75Ω,1/4W,J;4
R648	RA*102GJ48	RES,1KΩ,1/4W,J;4
R649	RA*102GJ48	RES,1KΩ,1/4W,J;4
R650	RA*102GJ48	RES,1KΩ,1/4W,J;4
R651	RA*750GJ48	RES,75Ω,1/4W,J;4
R701	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R703	RA*473GJ48	RES,47KΩ,1/4W,J;4
R704	RA*101GJ45	RES,100Ω,1/4W,J;4
R705	RA*473GJ48	RES,47KΩ,1/4W,J;4
R706	RA*101GJ45	RES,100Ω,1/4W,J;4
R801	RC*10C1JS9	RES(M),1Ω,1W,J;S
R802	RA:470IJ47	RES,47Ω,1/2W,J;4
R803	RA:224IJ47	RES,220KΩ,1/2W,J;4
R804	RA*101GJ45	RES,100Ω,1/4W,J;4
R809	RA*470GJ49	RES,47Ω,1/4W,J;4
R810	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R811	RA*102GJ48	RES,1KΩ,1/4W,J;4
R812	RC*2223JU1	RES(M),2.2KΩ,3W,J;U
R813	RC*2223JU1	RES(M),2.2KΩ,3W,J;U
R814	RC*2223JU1	RES(M),2.2KΩ,3W,J;U
R815	RA*223GJ46	RES,22KΩ,1/4W,J;4
R816	RA*102GJ48	RES,1KΩ,1/4W,J;4
R817	RA*224GJ49	RES,220KΩ,1/4W,J;4
R818	RA:330IJ48	RES,33Ω,1/2W,J;4
R819	RA*101GJ45	RES,100Ω,1/4W,J;4
R824	RA*470GJ49	RES,47Ω,1/4W,J;4
R825	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R826	RA*102GJ48	RES,1KΩ,1/4W,J;4
R827	RC*2223JU1	RES(M),2.2KΩ,3W,J;U
R828	RC*2223JU1	RES(M),2.2KΩ,3W,J;U
R829	RC*2223JU1	RES(M),2.2KΩ,3W,J;U
R830	RA*102GJ48	RES,1KΩ,1/4W,J;4
R831	RA*223GJ46	RES,22KΩ,1/4W,J;4
R832	RA*224GJ49	RES,220KΩ,1/4W,J;4
R833	RA:330IJ48	RES,33Ω,1/2W,J;4
R834	RA*101GJ45	RES,100Ω,1/4W,J;4
R839	RA*470GJ49	RES,47Ω,1/4W,J;4
R840	RA*222GJ43	RES,2.2KΩ,1/4W,J;4
R841	RA*102GJ48	RES,1KΩ,1/4W,J;4
R842	RC*2223JU1	RES(M),2.2KΩ,3W,J;U
R843	RC*2223JU1	RES(M),2.2KΩ,3W,J;U
R844	RC*2223JU1	RES(M),2.2KΩ,3W,J;U
R845	RA*102GJ48	RES,1KΩ,1/4W,J;4
R846	RA*223GJ46	RES,22KΩ,1/4W,J;4
R847	RA*224GJ49	RES,220KΩ,1/4W,J;4
R848	RA:330IJ48	RES,33Ω,1/2W,J;4
R849	RA*103GJ41	RES,10KΩ,1/4W,J;4
R850	RA*103GJ41	RES,10KΩ,1/4W,J;4
RD109	DN41482819	DIODE 1N4148 (TFK)

Position	Parts No.	Description
RL101	WJ211B2H*2	RELAY DC12V 5A (JW2HN-DC12V)
RL401	WJ211B2H*2	RELAY DC12V 5A (JW2HN-DC12V)
RL402	WJ211B2H*2	RELAY DC12V 5A (JW2HN-DC12V)
SK101	1T0T2N23NB	BRACKET REAR SECC T=1.0mm DL-17MU/DH-17M
SK101	BSA10300*2	AC SOCKET 3P PF-125
SK101	KQ1500W0I0	BRAID WIRE 150mm+4.3φ GND
SK101	LC15212C17	RI CORE 21.2*6*12.7
SK101	NESOCKET03	AC SOCKET ASS'Y
SK101	WR112E2J*0	ROCKER SW 1P-1T 6A/25V ALL MODEL
SK101 G.to BKT.	KW10005GI4	WIRE 100mm G/Y UL1015# 18+4.3φ
SK101 L TO SW	KW09009209	WIRE 90mm BR UL1617#22 +6φ/8φ tube
SK101 TO PCB	KW08009725	WIRE 80mmBLU UL1617# 22+HOOK+8φ tube
SK101 GND use	4T004N05N3	WASHER STAR.ID/4#
SK101 GND use	4T408N03N5	SCREW ISO #4*8mm NI
SK101 OTHER	4T004N05N3	WASHER STAR ID/4#
SK101 OTHER	4T408N03N5	SCREW ISO #4*8mm NI
SK101 SW TO PCB	KW08009220	WIRE 80mm BR UL1617#22 +HOOK+6φ tube
SK101 VIDEO CABLE	4T308N01N4	SCREW TAP #3*8mm NI W/H
SK601	1T0K2A43N4	BRACKET GROUND A TS T=0.8mm DH-17
SK601	4T004N05N3	WASHER STAR ID/4#
SK601	4T408N03N5	SCREW ISO #4*8mm NI
SK801	BSCB09*619	CRT SOCKET 9 PIN (DOUBLE FOCUS)
SP801	CS0102DN27	1PF/200V±30%(KSA-201-30)
SP802	CS0102DN27	1PF/200V±30%(KSA-201-30)
SP803	CS0102DN27	1PF/200V±30%(KSA-201-30)
SP804	CS0103C*Z0	SPARK CAP,1PF/1.5KV AG15
SP805	CS0103C*Z0	SPARK CAP,1PF/1.5KV AG15
SW201	WA211B0H27	TACT SW 2P-1T DC12V 50 mA (L:3.85)
SW202	WA211B0H27	TACT SW 2P-1T DC12V 50 mA (L:3.85)
SW203	WA211B0H27	TACT SW 2P-1T DC12V 50 mA (L:3.85)
SW204	WA211B0H27	TACT SW 2P-1T DC12V 50 mA (L:3.85)
SW205	WA211B0H27	TACT SW 2P-1T DC12V 50 mA (L:3.85)
SW206	WA211B0H27	TACT SW 2P-1T DC12V 50 mA (L:3.85)
SW207	WA211B0H27	TACT SW 2P-1T DC12V 50 mA (L:3.85)
SW208	WA211B0H27	TACT SW 2P-1T DC12V 50 mA (L:3.85)
SWIVEL use	22036N08N5	LOCKER SWIVEL φ35.8*21.3mmH
SWIVEL use	2P0K2N06N9	SWIVEL DISK DH-1782
SWIVEL use	2P0K2N07N4	SWIVEL BASE DH-1782
SWIVEL use	3L016A12N9	LEG RUBBER 12*16*3mm X-1448
T101	TME4207032	POWER TRANS DH-1764 EE-42 240uH VER:B
T401	TDE1907034	H.D.T 2.8mH DH-1764
T402	TIE250*012	DC-DC TRANS EE-25 136uH/49Ts
T403	TBC000*205	FBT DH-1764U 0.913mH
T404	TFE2207011	DYNAMIC FOCUS X'FROM EI-22 1.3mH
VR101	VE102RB115	SVR B-1KΩ 0.3W 6φ
VR402	VE102RB115	SVR B-1KΩ 0.3W 6φ

Position	Parts No.	Description
VR403	VE502RB119	SVR B-5KΩ 0.3W 6φ
VR404	VE503RB111	SVR B-50KΩ 0.3W 6φ
VR405	VE503RB111	SVR B-50KΩ 0.3W 6φ
VR601	VE503RB111	SVR B-50KΩ 0.3W 6φ
VR801	VH103RB110	SVR B-10KΩ 0.3W 6φ
VR802	VH103RB110	SVR B-10KΩ 0.3W 6φ
VR803	VH103RB110	SVR B-10KΩ 0.3W 6φ
W101	BH2B421018	BASE 3P 7.92mm (no pin2) UL94V-0
W201	BI41211007	POST HEADER 180° 2.54 mm 4PIN(two pin 2)
W401	BE2B121019	BASE 2P 2.5mm(JST) UL94-V0
W402	BH2B421018	BASE 3P 7.92mm (no pin2) UL94V-0
W403	BP41980011	BASE GT PIN 4P 2.36φ 10*8mm
W404	BE5B121012	BASE 5P 2.5mm(JST) UL94-V0
W601	BEBB121019	BASE 11P 2.5mm(JST) UL94-V0
W602	BE6B121013	BASE 6P 2.5mm(JST) UL94-V0
W801 TO W404	KDB51A1017	5P WIRE 230mm R/W/BLU/Y /BLK UL1007#26

EXPLODED VIEW/PARTS LIST




T101 EE-42
IC101 3842N
IC102 74LS221
IC201 6850
IC202 PST520C
IC203 74HCT14
IC204 MTV004-02
IC205 24C04
IC206 MTV002
IC401 TDA9105
IC301 TDA8172
IC402 7812
Q101 FS7TH-12
Q102 MCR100-6
Q103 DTC114
Q104 MCR100-6
Q201 2SC1384
Q202 2SC945
Q204 2SC945
Q205 2SC945
Q206 2SB772
Q207 2SC945
Q208 2SB772
Q209 NC
Q401 2SK941
Q402 2SC5252
Q403 2SC5252
Q404 FS-10UM
Q405 2SA673
Q406 2SA673
Q407 2SD2107M
Q408 2SC945
Q409 IRF630
Q410 2SC945
Q417 2SC1959
Q424 2SC1959
Q426 2SC1959
Q427 2SA733
Q428 2SC1959
Q429 KTA200-Y
Q430 DTC114
Q431 2N3904
RL101 RELAY
RL401 RELAY
DEGAUSS COIL
ROTATION-COIL
CANCEL-COIL
LINEAR COIL
DC TO DC TRANS
FBT PULSE
H-DY
W101
W201
W401
W402
K402
SW101
SW201
SW202
SW203
SW204
SW205
SW206
SW207
SW208
CX201 8MHZ
TP1
TP3
R-OUT
G-OUT
B-OUT
GND
12V
14.4V
14.3V
14.4V
5V
-12V
A 140 Vpp
B 5 Vpp
C 1.6 Vpp
D 46 Vpp
E 11.6 Vpp
F 12 Vpp
G 12 Vpp
H 4.5 Vpp
I 240 Vpp
J 4.8 Vpp
K 40 Vpp
L 180 Vpp
M 14 Vpp
N 65 Vpp
O 180 Vpp
64KHZ
8MHZ
110V AC INPUT
HOR
VER

CRT TYPE / ITEM	HITACHI M41KKL180X14	HITACHI M41KSX683X74	PANASONIC M41KXH157X02	
C455	5600PF 1.6KV	5600PF 1.6KV	5600PF 1.6KV	
W402	BASE 3P 7.92mm	JUMPER	JUMPER	
C457	5600PF 1.6KV	5600PF 1.6KV	7500PF 1.6KV	
R528	JUMPER 15mm	1.5Ω 1W	0.62Ω 1W	
J242	5mm	5mm	5mm	
J055	10mm	10mm	10mm	
C455	0.47uF 250V	0.47uF 250V	0.68uF 250V	
C474	0.22uF 400V	0.22uF 400V	0.33uF 400V	
C471	0.56uF 250V	0.56uF 250V	0.82uF 250V	
C436	1uF 250V	1uF 250V	3.3uF 250V	
C473	0.1uF 400V	0.1uF 400V	0.15uF 400V	
R509	47K 1/4W	47K 1/4W	56K 1/4W	
R515	12K 1/4W	12K 1/4W	9.1K 1/4W	
R613	33K 1/4W	33K 1/4W	47K 1/4W	
R426	15K 1/4W	15K 1/4W	10K 1/4W	
R431	39K 1/4W	22K 1/4W	22K 1/4W	
R310	220Ω 1/2W	220Ω 1/2W	220Ω 1/2W	
R406, R407	10Ω 2W	6.2Ω 3W	6.2Ω 3W	
T1 - T2	NC	BLACK 210mm	BROWN 330mm	
T403	TBC000×205	TBC000×205	TBC000×205	
L405	110uH	110uH	70uH	
D433	NC	UF5406	UF5406	
D425	DMV32B	BY359	BY359	

H-FREQ	CS1	CS2	CS3	CS4	PS0	PS1
H <29KHZ	1	1	0	0	0	0
29KHZ≤ H <33KHZ	1	1	0	0	1	1
33KHZ≤ H <41KHZ	1	1	1	1	1	1
41KHZ≤ H <52KHZ	0	1	1	1	1	1
52KHZ≤ H <58.5KHZ	0	0	0	0	1	1
58.5KHZ≤ H <70KHZ	0	0	0	1	1	1
70KHZ≤ H <79KHZ	0	0	1	0	1	1
79KHZ≤ H <86KHZ	0	0	1	1	1	1
86KHZ≤ H	0	0	1	1	0	0
OVERRIDE	1	1	0	0	1	1

NOTE:

(1) All values of resistors are in Ohms ; 1/4 wattages ; +/- 5% .except specified notes on diagrams.
(2) All values of capacitors are in "Farads".
(3) The value of electrolytic capacitors are 50 volts rating .except specified notes on diagrams. (E.C SYM ⧺)
(4) The value of c.c are 50 volts rating .except specified notes on diagrams. (C.C SYM ⧧)
(5) The chasssis ground is indicated as ⏚
(6) The Zener diodes are 1/2 wattages type.
(7) The varied resistor are +/- 20% , 1/2 wattages type.

10 7040			
MODEL: DH1764U	SHEET NO.	DESIGN	DRAWING
ITEM: MAIN/CRT	DATE: APR.14, 1997	PREPARE	KEVIN WEN	L.K.CHIEN/
FILE NAME: DH1764U	SCH REV: 2.1	CHECKED	W.L.Lin	Jina Tsai-Man
ECN NO:		APPROVED	Mida Chung	

RCEM014